THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

ART. I. *Remarks on Tic Douloureux; with Cases.* By N. CHAPMAN, M. D. Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania.

THIS is the earliest of the titles conferred on a nervous affection of a peculiar nature, which seems to have attracted attention only in very modern times. It is true, that to so remote a date as that of the Arabian writers of the eleventh century, the recognition of the disease is by some assigned, while others pretend more distinctly to find it in the works of LUDWIG and DEGENER, printed in 1673 and 1724. Of the precise claims of these authorities to priority in this respect, having had no opportunity of consulting them, I am unable to determine: but they are slenderly urged, and probably rest only on slight hints, or rude sketches of some nervous affection, which by a too liberal construction, are made to apply to the one now under review.

It is commonly conceded, that the merit of first noticing it, is due to M. ANDRÉ of France, by whom some account of it was published about the middle of the last century.* That however it previously existed, there can be no doubt, and among other evidence to this purport, which has been appealed to, is the statement of a case treated by the celebrated LOCKE, the metaphysician, who in early life studied and occasionally practised physic.

The notion entertained at present by many, of its being a new

* 1756.

imagination, than for talents for patient and careful investigation, we should hardly have suspected him of having indited this extraordinary rapsody in sober earnestness. The want of precision and accuracy which usually distinguish the attacks upon the physiological doctrine eminently characterize the present one. Dr. Harrison makes sad confusion in the doctrines of the day. He appears to suppose that all the practitioners in France are Broussaisans! What will the Pinelians, the Pathological Anatomists, the Eclectics, &c. say to this? He assumes that according to the physiological doctrine, "fever is *nothing more* than gastro-enterite!" He charges the disciples of this doctrine with "having drawn from the magazine of fancy for a theory of fever," and then triumphantly asks, "will the corruscations of a fervid imagination eclipse the sober splendour and guiding radiance of a just experience?" (!) He informs us that "the disciples of Broussais in France, differ on the exact site of the inflammation in the intestinal tube. Louis, in his work entitled Recherches Anatomiques, Pathologiques et Therapeutiques sur la maladie connue sous le nom gastro-enterite, &c. says, that in every case of fever, the elliptical plates of the bowels are the seat of lesion. 'De toutes ces lesions une seule étant constante, ayant lieu chez tous les sujets, je veux parler de l'alteration de plaques elliptiques de l'intestin grêle, &c.'* Others assert, that the glands of Peyer and Brunner are the seat of the lesion, whilst some state that fever is altogether dependent on follicular ulceration." If M. Louis will not admit the accuracy of the anatomical distinctions pointed out in this quotation, he will at least be somewhat surprised at being classed among the disciples of Broussais. Had Dr. Harrison taken the trouble to ascertain with precision, what are the glands of Peyer and Brunner, the elliptical plates of Louis, the mucous follicles of the intestines, he might have been led to suspect that this argument, which he appears to think is destined to give the *coup de grace* to the physiological doctrine, is not very overwhelming. Indeed, it will be somewhat ludicrous if it should turn out as we shrewdly suspect it may, that the elliptical plates of Louis consist of the glands of Peyer in a state of engorgement and ulceration, and that Peyer's glands are nothing more than mucous follicles, the follicules agminées of the French pathologists. Were Dr. Harrison an obscure practitioner, or had his observations been issued as an ephemeral pamphlet, and thus likely to have but a limited circulation, we should have passed them over unnoticed, as we have many other similar attacks upon the physiological doctrine. But Dr. Harrison is one of the medical magnates of the west; his paper has had currency given to it, by its insertion in one of the most respectable journals in this country, (the Baltimore Medical and Surgical Journal, No. 2,) and we should therefore be recreant to our trust were we to allow it to pass without comment, calculated as we conceive it to be, neither to inculcate correct information at home, nor elevate the character of the profession abroad.

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Professor Dunglison's Address delivered to the Graduates of Medicine at the Commencement, March 19th, 1834.—This is an interesting exposition and criticism of the opinion of Lamarck, who maintains, that the habits of an animal are not dependent upon its organization; but on the contrary, its habits, mode of life, and those of its ancestors, have, in the succession of ages, determined the form of its body, the number and condition of its organs, and the functions and faculties it enjoys. This able address has been published by the graduates and students.

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The Value of a great Medical Reputation, with Suggestions for its Attainment; a Lecture, Introductory to the Summer Course of the Medical Institute. By J. K. Mitchell, M. D. Lecturer on Chemistry. An interesting subject well treated.

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University of Pennsylvania.—The number of students in this institution during the session 1833–4, was 860; of which, 431 were medical students.

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Medical Department of the University of Maryland.—The number of students, exclusive of graduates of other schools and officers of the army and navy, was 143.

* Paris, 1829, p. 449, tom. 1.

QUARTERLY
MEDICAL ADVERTISER.

IN consequence of the extended circulation of the AMERICAN JOURNAL OF THE MEDICAL SCIENCES, the Proprietors intend, in compliance with the wishes of many of their Friends, to affix to each No. a Sheet of Advertisements. All Booksellers, Medical Gentlemen, and others desirous of taking advantage of this mode of announcement, will please address their Advertisements to CAREY, LEA & BLANCHARD, Philadelphia, by the 10th day of the month preceding that of the publication of the Journal, viz. on 10th July, 10th October, 10th January, and 10th April.

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Philadelphia, January 20, 1830.

UNIVERSITY OF PENNSYLVANIA.

At a Commencement held publicly in the Musical Fund Hall, Locust street, March 27th, 1834, *the Degree of Doctor of Medicine was conferred upon the following gentlemen:—*

NAMES.	RESIDENCE.	ESSAY.
Armstrong, Ralph C.	Georgia,	Fever and its Treatment.
Allen, Samuel A.	Virginia,	Scarlatina.
Abbott, Thomas H.	S. Carolina,	Bilious Worm Fever.
Anderson, Richard	Virginia,	Gonorrhœa.
Alexander, John Thomas	Louisiana,	Capillary Circulation.
Arrott, Colin	Philadelphia,	Injuries of Head.
Armistead, William A.	N. Carolina,	Intermittent Fever.
Bouchelle, Robert M.	N. Carolina,	Pneumonia.
Bond, John W.	N. Carolina,	Hepatitis.
Booker, Shields	S. Carolina,	Digestion.
Binford, Henry A.	Alabama,	Remittent Fever.
Baldwin, Isaac H.	Virginia,	Organic Force.
Beekman, William F.	New York,	Strictures of Urethra.
Balfour, William T.	Virginia,	Strictures of Urethra.
Bellamy, Samuel C.	N. Carolina,	Scarlatina.
Boyd, John	Pennsylvania,	Hydrothorax.
Boyer, Conrad R.	Philadelphia,	Digitalis Purpurea.
Bower, William H.	Virginia,	Coxalgia.
Bryan, James	Philadelphia,	Epidemics.
Buchanan, Archibald H.	Tennessee,	Mental Derangement.
Baugh, John M.	Virginia,	Scarlatina.
Crump, George	Virginia,	Hydrops.
Camm, Edward	Virginia,	Intermittent Fever.
Chambers, Benjamin F.	S. Carolina,	Vermes.
Colhoun, John B.	Philadelphia,	Ulceration.
Coleman, Richard	N. Carolina,	Acute Hepatitis.
Chewning, Albert G.	Virginia,	Acute Hepatitis.
Cotten, John A.	N. Carolina,	Catamenia.
Conover, William J.	New Jersey,	Fever.
Christian, Andrew H.	Virginia,	Scarlatina.
Cross, Richard	Virginia,	Conception.
Coate, Daniel	Upper Canada,	Nephritis.

Dossey, Alonzo B. C.	S. Carolina,	Cold.
Drake, Joseph A.	N. Carolina,	Dysentery.
Denig, George W.	Pennsylvania,	Scarlatina.
Dulaney, William J.	Virginia,	Scarlatina.
Davis, William	Virginia,	Laryngitis.
Ealy, Elijah	Pennsylvania,	Fungus Hæmatodes.
Ely, Henry P.	Pennsylvania,	Intermittent Fever.
Egbert, Daniel	New Jersey,	Fungus Hæmatodes.
Finley, Clement A.	Ohio,	Dysentery.
Fowler, Newton	S. Carolina,	Ascaris Lumbricoides.
Frayser, John R.	Virginia,	Intestinal Worms.
Franklin, James E.	Pennsylvania,	Moveable Cartilages of Knee Joint.
Germany, William	Georgia,	Hypertrophy of Heart.
Gregg, David R.	S. Carolina,	Tetanus.
Graham, Calvin	Virginia,	Sympathy.
Grattan, John	Virginia,	Bilious Colic.
Gordon, Benjamin W.	N. Carolina,	Variola.
Gilpin, J. Bernard Jr.	Nova Scotia,	Old Age.
Gilliam, John R.	N. Carolina,	Small Pox.
Gaskell, Isaac P.	Philadelphia,	Apoplexy.
Godon, Victor L.	Philadelphia,	Iodine.
Harrison, Thomas A.	Virginia,	Cynanche Trachealis.
Hambleton, Alexander	Maryland,	Hysteria.
Harvie, John B.	Virginia,	Calorification.
Hite, Walker M.	Virginia,	Indigestion.
Hull, Peter K.	Virginia,	Principles of Revulsion.
Hoxton, William W.	Dis. of Columb.	Influence of the Mind.
Hicks, Benjamin J.	N. Carolina,	Mental Emotions, &c.
Hollingsworth, J. Yellott	Maryland,	Epidemic Erysipelas.
Huston, Nathan J.	Virginia,	Cynanche Laryngitis.
Holmes, William J.	Pennsylvania,	Variola.
Hastings, John G.	Pennsylvania,	Ranula.
Helm, William D.	Kentucky,	Delirium Tremens.
Hope, Thomas M.	Virginia,	Remittent Fever.
Hamilton, Charles C.	Nova Scotia,	Acute Peritonitis.
Henry, William	Pennsylvania,	Cholera Infantum.
Horlbeck, Peter	S. Carolina,	Bilious Fever.
Johnson, Peter T.	Virginia,	Traumatic Hæmorrhage.
Johnston, Madison	S. Carolina,	Inguinal Hernia.
Jones, James S.	Georgia,	Acute Gastritis.
Irvine, James F.	Pennsylvania,	Diabetes.
Kemp, William M.	Maryland,	Peculiarities of Fœtus.
Kirk, John W.	S. Carolina,	Intermittent Fever.
King, Charles R.	New York,	Effects of Cold.
Kennedy, Edward H.	Pennsylvania,	Metastasis.
Kerr, William	Pennsylvania,	Hæmoptysis.
Kinsey, Jefferson	Pennsylvania,	Modus Operandi of Emetics.
Ker, John James	Louisiana,	Hypochondriasis.
King, David D.	Pennsylvania,	Variola.
Lathrop, Horace	New York,	Puerperal Peritonitis.
Lofland, Hazlet	Virginia,	Jaundice.
Lincoln, Henry	Massachusetts,	Metastasis.

Leitch, James A.	Virginia,	Arsenic.
Longshore, Joseph S.	Pennsylvania,	Digitalis Purpurea.
Leib, George C.	Philadelphia,	Cartilages of Knee Joint.
Lovelace, P. E. H.	Mississippi,	Chronic Hepatitis.
Lewis, Norbone W.	Virginia,	Cholera Infantum.
M'Ruer, Daniel	Maine,	Inflammation of Mucous Membranes.
Montgomery, Joseph F.	Virginia,	Chlorine.
Mauck, Aaron	Pennsylvania,	Fœtal Circulation.
Malone, T. Stith	Alabama,	Animal Magnetism.
M'Daniel, Richard H.	S. Carolina,	Asphyxia from Drowning.
Miller, Francis E. K.	Georgia,	Inflammation.
Murphy, Charles T.	S. Carolina,	Bilious Fever.
M'Nutt, Benjamin F.	Virginia,	Chemical Affinity.
Michie, James W.	Virginia,	Pathology of Fever.
M'Cantz, Robert James P.	S. Carolina,	Typhus Fever.
Neves, Albert G.	Virginia,	Pathology of Dropsy.
Norcom, Benjamin R.	N. Carolina,	Nitrate of Silver.
Postell, Philip S.	S. Carolina,	Epilepsy.
Pannill, David	Virginia,	Sympathy.
Pleasants, Henry	Pennsylvania,	Chloride of Soda, &c.
Palmer, George W.	Georgia,	Acute Hepatitis.
Philips, William	S. Carolina,	Intermittent Fever.
Punnett, John	St. Thomas,	Lithotomy.
Powell, Francis W.	Virginia,	Scarlatina.
Pitchford, Thomas J.	N. Carolina,	Bilious Fever.
Porcher, Edward	S. Carolina,	Scrofulous Ophthalmia.
Powell, Lemuel B.	N. Carolina,	Pathology of Intermittent Fever.
Prince, Abner	Delaware,	Acute Hepatitis.
Peete, George W.	Virginia,	Strictures of Rectum.
Rice, Edward	Pennsylvania,	Erysipelas.
Robinson, James S.	N. Carolina,	Tetanus.
Read, Robert A.	Virginia,	Functions of Liver.
Radford, John B.	Virginia,	Peritonitis.
Richardson, H. W.	S. Carolina,	Trachitis.
Roberts, Charles B.	Pennsylvania,	Rubeola.
Ricksecker, Moses	Pennsylvania,	Indications of Amputation.
Rasin, Edward F.	Maryland,	Bubonocele.
Reese, Henry W.	Virginia,	Hectic Fever.
Smith, Joseph A.	N. Carolina,	Liver and Bile.
Scales, Richard	N. Carolina,	Puerperal Peritonitis.
Semple, George W. M.	Virginia,	Blood-letting.
Sterett, Green	Kentucky,	Tripletts.
Stokes, George	N. Carolina,	Dysentery.
Taliaferro, William Q.	Virginia,	Copper.
Taliaferro, Edmund P.	Virginia,	Digestion.
Tennent, Henry	Delaware,	Intermittent Fever.
Taylor, Isaac E.	New York,	Hæmoptysis.
Turnipseed, Zechariah	S. Carolina,	Exercise.
Taliaferro, William Jr.	Virginia,	Scarlatina.
Turner, Pitticus	Virginia,	Scarlatina.
Thomas, George W.	Georgia,	Scarlet Fever.
Wingfield, James N.	Georgia,	Scarlatina.

Woodworth, Robert	New York,	Iodine.
Wickes, Stephen	New York,	Spontaneous Hæmorrhage.
Wall, Richard Z. R.	N. Carolina,	Emetics.
Watson, Beverley O.	Tennessee,	Acute Gastritis.
Wildman, Elias	Pennsylvania,	Intermittent Fever.
Wright, David M.	N. Carolina,	Revulsives.
Woolverton, Jonathan	Upper Canada,	Ophthalmia.
Watson, Edwin	Virginia,	Puerperal Convulsions.
Wade, Elbert C.	Virginia,	Catamenia.

At the preceding Commencement, held July 15th, 1833, the Degree of Doctor of Medicine was conferred upon

James L. Bunch,	N. Carolina,	Ascites.
John Carter,	Virginia,	Cynanche Trachealis.
James G. Turpin,	Virginia,	Gun-shot Wounds.

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OF THE

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Communications have been received from Drs. BARTON, HEUSTIS, VON DEM BUSCH, EVE, FOSGATE, PERRINE, CHARLTON, RAMSAY, and C. A. LEE.

The following works have been received:—

Transactions of the Medical Society of the State of New York. Vol. II. Part I. Albany, 1834. (From the society.)

An Account of Jane C. Rider, the Springfield Somnambulist: the Substance of which was Delivered as a Lecture before the Springfield Lyceum, January 22d, 1834. By L. W. BELDEN, M. D. Springfield, 1834. (From the author.)

Jahres-Bericht über das Clinische Chirurgish-Augenärzliche Institut der Universität zu Berlin, abgestattet vom Director der genannten Anstalt Dr. CARL FERDINAND VON GRAEFE. Berlin, 1832. (From Dr. Von dem Busch.)

Die Behandlung der Asiatischen Cholera durch Anwendung der Kättle. Von Dr. JOHANN LUDWIG CASPER. Berlin, 1832. (From Dr. Von dem Busch.)

Sul Commercio Sanguigno tra la Madre e il feto Lezione di TOMMASO BIANCINI. Pisa, 1833. (From Professor Geddings.)

Medicinalbericht des königl. preuss. Medicinal-Collegiums der Provenz Sachsen für das Jahr 1830, Zus-ammengestellt von Dr. AUGUST ANDREAE, königl. Medicinalrathe und Lehrer an der Med Chir. Lehranstalt zu Magdeburg. Magdeburg, 1831. (From Dr. Von dem Busch of Bremen.)

Die Behandlung der Cholera in ihren verschiedenen Perioden und Graden von Dr. ERNST BARCHEWITZ. Danzig, 1831. (From Dr. Von dem Busch.)

Mittherlungen über die Asiatische Cholera. Von C. P. HOLSCHER, M. D. Hanover, 1831. (From Dr. Von dem Busch.)

Skizzen und Bemerkungen von einer Reise und dissen Umgegend im August und Sept. 1831, im Auftrage der königl. hanov. Immediat-Commission gegen die Cholera unternommen vom Dr. LOUIS STROMEYER. Hanover, 1832. (From Dr. Von dem Busch.)

Letter to the Physicians of France on Homæopathy. By the COUNT DES GUIDI, M. D. &c. Translated from the French, by WALTER CHANNING, M. D. New York, 1834. (From the translator.)

Topographical Description and Historical Sketch of Plainfield, in Hampshire County, Massachusetts, May, 1834. By JACOB PORTER. Greenfield, 1834. (From the author.)

Address to the Horticultural Society of Maryland. By JOHN H. B. LATROBE. May 15th, 1834. (From Dr. J. C. Cohen.)

First and Second Annual Reports of the Fellenberg Academy. Greenfield, 1834. (From Jacob Porter, Esq.)

Catalogue of the Trustees, Faculty, and Students of the Medical College of the State of South Carolina. Charleston, S. C. (From Professor Frost.)

Chemistry, Meteorology, and the Function of Digestion, considered with reference to Natural Theology. By WILLIAM PROUT, M. D., F. R. S., Fellow of the Royal College of Physicians. Philadelphia, Carey, Lea & Blanchard, 1834. (From the publishers.)

Essays on some of the most important Articles of the Materia Medica, comprising a full account of all the New Proximate Principles, and the Popular Medicines lately introduced in Practice, detailing the Formulas for their Preparation, their Habitudes and Peculiarities, Doses and Modes of Administration; with Remarks on the most eligible Form of their Exhibition: to which is added a Catalogue of Medicines, Surgical Instruments, &c. &c. adapted for a Physician at the outset of his Practice, with the Doses and Effects attached to each Medicine, &c. &c. By G. W. CARPENTER. Second edition, revised and enlarged. Philadelphia, 1834. (From the author.)

A Discourse on Quackery, read before the Massachusetts Medical Society at their Annual Meeting, June 4th, 1834. By ZADOK HOWE, M. D. M. M. S. S. Boston, 1834. (From the author.)

An Address delivered to the Graduates of Washington Medical College, Baltimore, at the Annual Commencement, on Monday, March 17th, 1834. By SAMUEL ANNAN, M. D. Professor of Anatomy and Physiology. Baltimore, 1834. (From the author.)

Archives Générales de Médecine, for September, October, November, and December, 1833, and January, 1834. (In exchange.)

Révue Médicale. for September, October, November, and December, 1832, and January, 1834. (In exchange.)

Annales de la Médecine Physiologique, for June, July, August, September, October, November, and December, 1833, and January, 1834. (In exchange.)

Transactions Médicales. Journal de Médecine Pratique et de Litterature Médicales, for September, October, November, and December, 1833. (In exchange.)

Journal Universel et Hebdomadaire de Médecine et de Chirurgie Pratiques, for October, November, and December, 1833. (In exchange.)

Journal Hebdomadaire des Progres des Sciences Medicales, for January and February, 1834. (In exchange.)

Journal des Connaissances Medico-Chirurgicales, for October, November, December, 1833, and January, February, and March, 1834. (In exchange.)

Journal de Chimie Médicale, de Pharmacie et de Toxicologie, Rédigé par les Members de la Société de Chimie Médicale, for October, November, and December, 1833, January, February, 1834. (In exchange.)

Gazette Médicale de Paris, for October, November, December, 1833, and January, February, March, 1834. (In exchange.)

La Lancette Francaise, Gazette des Hôpitaux, Civils et Militaires. Tom. VII. Nos. 122 to 160. Tom. VIII. No. 1 to 30, except No. 4, 5, 6, 7. (In exchange.)

Journal de Pharmacie, for October and November, 1833. (In exchange.)

London Medical Gazette, for March, April, and May, 1834. (In exchange.)

The Edinburgh Medical and Surgical Journal, for April, 1834. (In exchange.)

The Medico-Chirurgical Review, for April, 1834. (In exchange.)

The London Medical and Surgical Journal, for January, February, and March, 1834. (In exchange.)

Baltimore Medical and Surgical Journal and Review, for April and July, 1834 (In exchange.)

Transylvania Journal of Medicine and the Associate Sciences, for January, February, and March, 1834. (In exchange.)

The Medical Magazine, for April, May, and June, 1834. (In exchange.)

Boston Medical and Surgical Journal, Vol. X. No. 10. (In exchange.)

The Western Journal of the Medical and Physical Sciences, April, 1834. (In exchange.)

The Western Medical Gazette, April, 1834. (In exchange.)

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication, should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY, LEA & BLANCHARD, Philadelphia, for the Editor of the American Journal of the Medical Sciences."

All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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THE

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MEDICAL SCIENCES.

ART. I. *Remarks on Tic Douloureux; with Cases.* By N. CHAPMAN, M. D. Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania.

THIS is the earliest of the titles conferred on a nervous affection of a peculiar nature, which seems to have attracted attention only in very modern times. It is true, that to so remote a date as that of the Arabian writers of the eleventh century, the recognition of the disease is by some assigned, while others pretend more distinctly to find it in the works of LUDWIG and DEGENER, printed in 1673 and 1724. Of the precise claims of these authorities to priority in this respect, having had no opportunity of consulting them, I am unable to determine: but they are slenderly urged, and probably rest only on slight hints, or rude sketches of some nervous affection, which by a too liberal construction, are made to apply to the one now under review.

It is commonly conceded, that the merit of first noticing it, is due to M. ANDRÉ of France, by whom some account of it was published about the middle of the last century.* That however it previously existed, there can be no doubt, and among other evidence to this purport, which has been appealed to, is the statement of a case treated by the celebrated LOCKE, the metaphysician, who in early life studied and occasionally practised physic.

The notion entertained at present by many, of its being a new

* 1756.

upper lip, gums and teeth. Displayed in the forehead, temple, inner canthus of the eye or the globe itself, the ophthalmic branch of the fifth pair is affected, and when there is a copious effusion of tears, which sometimes happens, it is not improbable it arises from a twig of the ophthalmic, which goes to the lachrymal duct. Extending to the lower jaw or tongue, the third branch of the fifth pair is also implicated. As frequently, perhaps, more so, with the pain already described, do we find it in the ear, the mastoid process of the temporal bone and the angle of the lower jaw. This being the case, the recurrent branch of the fifth, and the portio dura are both concerned: but so intimate is the connexion of most of these nerves, that in a large proportion of instances of any length of persistence, the whole of them are apt in some degree to be involved. The agony is sometimes so extreme, as scarcely to be borne, inducing even a distracted or phrensied state of mind. Commonly, however, the suffering is not so great, and between the transient paroxysms there are remissions bringing with them comparative ease. The part is so exquisitely sensitive that the lightest touch cannot be tolerated, even less than firm pressure, and never fails to renew the excruciating dartings. Cases of recent origin particularly, are said sometimes to be attended by turgescency of the vessels of the affected part with some rubescence, or as is affirmed, by actual phlogosis, which, however, I have never seen—and occasionally, there is spasm or at least twitchings or vellications of the adjacent or remoter muscles. The circulation undergoes no material change, or not greater than might be supposed from the mere pain or the stimulating remedies usually employed. Decided fever, perhaps, never takes place. The duration of the attack is very indefinite, from one or two hours to several days, and its recurrence or exacerbation is alike in the day and night. Going off by gradual abatement, it leaves the part for some time afterwards either very tender or moderately sore, and without any further suffering or inconvenience.

Equally uncertain is the period of its return. As intimated, its revisitations are sometimes as regular as those of intermittents. But such instances are rare, and the interval may be a week, a month, a year or more, much depending in this respect on the nature of the cause, whether permanent or otherwise, or the degree of exposure to the excitements of an attack, or the case being acute or chronic, in which latter state the affection ultimately becomes nearly continued.

The preceding account regards more immediately the commonest variety of the disease, that of the face for which the name tic dou-

loureux is still retained by some writers. But it may be manifested in any or every part of the body, external as well as internal, by the acutest pain or soreness merely of the scalp on one side only, or in the occiput or frontal portions, or in a great degree throughout the tegumentary tissue, apparently not penetrating deeper than the sentient surface,* or in the intercostal muscles, or those of the shoulder, loins, hip, and extremities, upper and lower, pursuing the course of their respective nerves, sometimes to the ends of the fingers or toes, or expanded over the palms of the hand or soles of the feet.†

Locations of the disease in the large articulations are common occurrences,‡ while on other and less frequent occasions, the smaller are its seat. It is sometimes to be met with in the testicles,§ and still oftener in the mammæ.‖ An attack may be confined to a mere spot. Thus, in one instance it occupied a space on the finger so small that it might be covered with a pea.

No one organ of the great cavities has any immunity from the disease. The brain does not wholly escape—the lungs, with their appendages, are frequently attacked—and the heart is still more exposed to its aggressions. Nearly, or perhaps quite as much, are the abdominal contents, the stomach, the upper and lower bowels down to the rectum, the liver, the spleen, the kidneys, the urinary bladder,

* Not the least remarkable case of this kind came under my own observation. Many years ago, I was consulted by a lady, who informed me, that after having suffered severely from neuralgia of the hip and lower extremity, she was seized periodically with exquisite tenderness of the skin, attended by an intense burning sensation, and occasional darting pains in various directions.

† This is the *neuralgia pedis* of Good, and the *neuralgia plantaris* of Chaussier. I have seen it both in the hand and foot. It is mostly confined to the palm or sole, though now and then shooting pains are felt up the limb.

‡ It occurs most frequently in the knee. M'Culloch remarks that it is apt to be mistaken for white swelling, and it is described by Brodie under the title of *hysterical* white swelling. My own cases of it had no analogy to that affection, and might more likely have been confounded with chronic rheumatism. They differed, however, from it in the total absence of tumefaction, and by the peculiarity of the pain.

§ Of this, I have known two instances, one in consultation with Dr. Physick. It is to be recognised by the characteristic pain, the absence of swelling and other changes in the testicle, and by uneasiness in the lumbar region.

‖ This is an affection for which I have been so often consulted, that I should presume it to be common. It has heretofore been very much regarded as rheumatism. The breast undergoes no alteration: but from a centre, as it were, lancinating pains emanate, extending to the side, sometimes up the head, and down the arm. Tenderness on percussion is usually betrayed at one point of the cervical vertebræ.

and above all, the uterus and its dependencies have been noticed as affected in this way.*

Not to descend into details which were foreign to my design, and more particularly as I have hereafter to expatiate to some extent on the subject, it may be sufficient now to remark, that the affection wherever it is fixed, though in some measure modified by the peculiarities of the nerves or general structure, exhibits essentially the same features, and is observant of similar laws. Nearly in every instance there may be recognised the influence of identical causes in its production—the characteristic pain, distinct and peculiar—its transient or more fixed nature, together with the several varieties in regard to the entire paroxysm—the gradations of severity, its duration, the interval between its recurrences, and the mode, whether stated, or at irregular and uncertain periods. The leading differences when thus existing, are its greater proneness to fluctuation—sometimes very rapidly changing its position—that it is more apt to involve several nerves at a time, giving to it a wider pervadence, and that the pain is usually far less intense than in the affections of the face.

Neuralgia is chiefly incident to middle or rather more advanced age, from the fortieth to the sixtieth year of life, and mostly occurs in the female sex, of delicate irritable nervous habits or shattered constitutions. Exceptions however exist to these general rules. It is occasionally met with in persons of vigorous frames and the soundest health, and even in boys and girls. There is, indeed, a mitigated form of it to which the latter are very liable at the season of puberty or a little later, associated with much disorder of system.

In reviewing the etiology of neuralgia, we can hardly avoid being struck with the number and diversity of the causes to which it has been ascribed. No doubt is longer entertained that these operate on the centres of the nervous system, or on the extremities of their respective nerves, the impression being reciprocally reflected. As such is the fact it were desirable to make this consideration the basis of an arrangement of them. But I am discouraged from the attempt by its difficulty, enhanced by the narrowness of the limits allowed to this brief discussion. My design, at present, is to bring them under two heads, dividing them into such as are local and general.

* Cases of nearly all these varieties I have met with: but the uterine are most familiar to me. Girls about the season of menstruation are peculiarly subject to such attacks. They are often periodical, the paroxysms returning daily or more irregularly for several days at a time, and then disappear. The pain is truly neuralgic, darting from the uterus through the pelvis, to one or both iliac regions. Tenderness of the lumbar vertebræ will sometimes be detected.

Belonging to the former description are mechanical injuries of the nerves, inflicted by wounds, excised, lacerated, punctured or contused. Examples to this purport are abundantly recorded, some few of which I shall mention. There is a case related, arising from a cut in the arm with a knife—a second by a cut in the cheek from a piece of China, which remained concealed in it—a third from the bite of the little finger by a child—a fourth from laceration of the hand by an explosion of gunpowder—several from the puncture of the lancet in venesection, and two instances by a blow in the eye and on the sinciput. Cases are also to be met with, which followed surgical operations, particularly amputations, attributed to the irritation of the excrescent tubercle formed on the end of a divided nerve. Tumours under other circumstances, are a still more frequent cause of the disease.

Nor is it less determined that it proceeds from lesions of bones, operating by the irritation of spiculæ or other asperities, or by the acrimony of the fluids when caries prevails, which conjecture is rendered probable by other foul ulcers having had an analogous effect. Cases in proof of this have been published by Dessault, Sir H. Halford, and among others which might be cited, is the memorable one of Dr. Pemberton, the origin of which was traced to an abscess in the frontal sinus. Much such a case has recently been under my care, which, however, terminated far more happily. Great mischief in this way is undoubtedly occasioned by compression. Not usually incident to lateral curvature or caries of the spine, it has sometimes been ascertained in connexion with both. The pressure of the head of the child in parturition certainly has induced it, most usually in the rectum, having seen it myself independently of other proofs of the fact which are extant. But far more operative is the fashionable corset. By tight-lacing, either the intercostal nerves, or the spinal marrow itself, becomes irritated, from which I have again and again remarked very severe neuralgic distress. That it, particularly when of the facial form, is dependent on dental irritation, and more generally than suspected I am persuaded, as well from my own observations as those of other practitioners.

Of the more general agencies in the production of neuralgia, the first which claims to be noticed, from the importance recently attached to it, are marsh miasmata. By Macculloch, indeed, who has brought to the elucidation of the subject great fidelity of observation, and industry of research, with adroitness in the collation and analysis of testimony, the hypothesis is presented with such plausibility, that

it can scarcely be resisted. Not prepared to go the extent to which he applies it, for in the ardour of generalization, he seems disposed to exclude almost every other influence, I think he has shown as well the affinities to the neuralgic disturbances, of numerous affections hitherto deemed dissimilar, as that the immediate malarious source of the latter, is infinitely wider spread than had ever been suspected. Examples in proof of these positions he adduces from his own and the observations of others, that independently of some powerful reasoning, his conclusions with due qualifications, are satisfactorily made out and established.

The recollection of my own practice furnishes no inconsiderable amount of evidence corroborative of the conviction to which I have arrived. During the prevalence of pernicious and anomalous intermittents among us some years ago, I repeatedly saw the paroxysm assuming the varied shapes of neuralgia, that of the optic and facial nerves, sometimes as hemicrania, on other occasions in the limbs, or the muscles of the abdomen, and also instances in the organs of the large cavities, especially in the latter, when the attack had become chronic, usually accompanied by the aspect and condition expressive of the protracted operation of palludal exhalations. Not the least curious of these instances was related to me by my friend, the late venerable Dr. Belville of Trenton, where the tip of a single finger in himself was for many weeks seized at precisely the same hour of the day with genuine tic douloureux, which having resisted diverse local applications, came promptly to be remedied by the sulphate of quinine.

As among the occasions of the disease, inordinate venereal indulgence cannot be omitted. Legitimately practised to excess, it may be productive of this effect, though much oftener it is to be traced to a criminal habit too disgusting to be more distinctly expressed, which, while operating to the derangement of the whole nervous system, is chiefly displayed in its severest form in the loins, lower extremities, and head.

Constitutional disorder from causes not so apparent, seems also to originate or conduce to the disease. Cases of it are habitually seen associated at least with those depravations of the digestive apparatus, bearing the nearest affinity to, or even the semblance of identity with the multitudinous and protean affections, which by a sweeping generalization, are embraced under the vague term of dyspepsia. We learn indeed from good authority, that a "careful review of all the published cases of neuralgia shows, that more than three-fourths of them manifested general disorder of health, and especially of the di-

gestive organs."* But while this is conceded, it is no less true, that it may be produced by lesions of any of the internal organs, or systems of organs, and especially of the uterus, by which the general condition of health is impaired. There is moreover great reason to suspect that a bad habit of body, brought on by the depredations of gout, and especially in its irregular and atonic forms, either lays the foundation of, or more directly excites some of these attacks. It is probable that not a few of the cases to which an allusion has been made, with vitiations of the digestive organs without an obvious cause, do thus originate in arthritic influence.

The state of anemia, whether brought on directly from excessive sanguineous depletion, by venesection, or hæmorrhage, or more slowly by a penurious, impoverishing diet, or by those organic or functional disorders which interrupt the process of hæmatosis, must be assigned as a prolific source of the disease. Dependent on this exsanguineous exhaustion, cases of it are of the most common occurrence. My friend Dr. Physick tells me, that he saw many such succeeding to the recoveries from yellow fever where blood-letting had been unduly practised, and they are as frequent under alike circumstances of other diseases. As sequelæ of hæmorrhage, particularly uterine floodings, who has not witnessed them, and not less in connexion with inveterate cachexy, from vitiation of the nutritive operations? Though any part may be involved, it is mainly the head that experiences the excruciating and peculiar neuralgic suffering.

The preceding are the principal of the remote causes of neuralgia in its several modifications, and which often are brought into action without the interposition of any further agency. But the latent predisposition is sometimes obviously awakened, and in a case only suspended, it may be immediately revived by an exposure to cold and moisture, or a draft of cool air, or walking, or other corporeal exertions, or by mental application, or by anxiety or depression of spirits—or conversely, the active emotions, or by touching the part, and when seated in the face or jaws, by chewing or talking, or hawking or spitting, or coughing or sneezing, or blowing the nose, or taking into the mouth any thing hot or cold, or sweet or acid, or washing the face, or combing the hair, together with other excitements of an exceedingly trivial nature, even by putting on a pair of spectacles.

Neuralgia well marked, can scarcely be mistaken. Its leading and distinguishing characteristics are a peculiar pain aptly ex-

* Med. Chir. Review, for the year 1828.

pressed by the term *tic*, consisting of successive shocks darting along a nerve or nerves as rapidly as those of electricity, and as transient, or when slighter, mere vibrations, seldom or never attended by swelling or any apparent inflammation, the paroxysms returning periodically, sometimes as regularly as intermittents in their several types. This however applies more to the disease in its acute form, and especially that affecting the facial nerves. Located elsewhere, or becoming chronic, it is more obscurely designated, though under all circumstances, so retentive of some of its own features, as to be recognised with little hesitation or perplexity.

Neuritis, and especially of the nerves of the teeth, occasioning what is called tooth-ache, bears the closest analogy to it when seated in the face. It may however be distinguished from ordinary and genuine odontalgia by the character of the pain, it being in the dental affection, deep-seated, more obtuse, and permanently enduring, ultimately followed by swelling of the cheek or gums, often ending in suppuration, or other effects of the inflammatory process. Cases without these symptoms or events, are probably always of a pure neuralgic nature.

To some of the varieties of rheumatism it is also said to have a close resemblance, from which however it so materially differs, that they need not be confounded. The seat of the latter is in the nervous, and of the former in the fibrous and muscular tissues. Nor are they induced by the same remote causes. Those of neuralgia are various, and rheumatism seems to originate only in a cold, moist atmosphere. An attack of the first is revived by many and the slightest circumstances, and of the second by a few and powerful influences only. Equal contrarieties exist in the symptoms. The pain of the one is acutely piercing, ticking, lancinating, limited in its direction, and transient—while that of the other is a dull, gnawing, throbbing, burning ache, more diffused and steady, or enduring. Neuralgia is without phlogosis or its terminations, and scarcely ever with any appreciable disturbance of the circulation, and the other is as uniformly the reverse, exhibiting in some parts the signs of the inflammatory process, ending in effusions and extravasations. This affection of the nerves, even when most protracted, does not impair the constitution or particular structures like rheumatism, which leads to the most serious disorganizations. Each is cured moreover by opposite remedies.

But though neuralgia is distinct from other diseases, it is not so easy to discriminate its own varieties as arising in the different portions of the nervous system. Being a matter of great practical im-

portance, I shall endeavour to bring together those signs which are mainly relied on for its elucidation. Emanating from the encephalon, we are told by a distinguished authority, "that the case is always preceded and attended by manifestations of cerebral disease, such as pain, giddiness, confusion; or some other uneasiness in the head, more or less disorder in the functions of some of the external senses, with symptoms of congestion or increased action in the vessels of the brain, and sometimes by a simultaneous or sympathetic affection of the stomach or liver, a circumstance not uncommon in many diseases of the sensorium."*

As parts of the spinal column may be concerned, so do its affections vary. The symptoms of the superior cervical division are pain in the scalp, shooting in various directions up the occipital, even to the frontal portion, or laterally along the temples or over the face, or sweeping behind the ears, or around the lower jaw, productive of rigidity of the muscles, impeding its movements and those of the head—difficulty of speaking, or as may happen, loss of voice, with vertigo, tinnitus aurium, and similar noises. These latter however are rare occurrences, and are owing probably to the implication of the medulla oblongata. As indicative of irritations of the inferior cervical portion it may be stated, that the pain is seated in the superior part of the chest, about the clavicle or scapula, or it runs down the arm sometimes even to the fingers, or passing forward, either the superficial integuments or the mammæ in females, one or both suffer extremely by exquisite soreness, or intense darting pains.

Many of these symptoms are common to the affection of the upper part of the dorsal division, though it is more strikingly characterized by pains in the intercostal muscles, or in the margin of the ribs, or in the sternum, or epigastric region, or in the integuments behind the chest—the acuteness of the pain being occasionally exchanged for dyspnœa in various degrees. Where the lower half is irritated, together with some of the preceding phenomena, there are a sense of constriction across the waist, and great tenderness of the parietes of the abdomen, attended by pains through the muscles.

In the affections of the lumbar and sacral section, we have a dull ache, or acute pain in the muscles of the loins, and those of the hips, with the lower extremities in a state resembling that I have described the upper to be, with this peculiarity, that if the individual attempts to walk, he totters or rolls, his knees giving way, feeling no security in his step, exhibiting altogether the appearance of inebriation in his

* Armstrong.

movements. But it is to be recollected, that different and remote portions of the column may be at the same time implicated, and it has happened to be affected, though in very rare instances, throughout its whole extent.

As the spinal marrow in its different parts is concerned, so may the ganglia or branches of the sympathetic nerve, one or several simultaneously, and the symptoms modified accordingly, to trace which minutely is not my purpose. They are in a word such as denote depravation of the organs deriving their nerves from this source: thus, the heart or great blood-vessels violently palpitate, or are seized with true neuralgic pain, the lungs suffer as in spasmodic asthma, or the attack being more comprehensive, we have angina pectoris. The stomach and bowels are assailed by cramps or colics, mostly in the shape of what is called gastrodynia, or by pains more piercing and fugitive, not one of the abdominal viscera entirely escaping, and especially the kidneys, urinary bladder and uterus.

Connected with these various disturbances, there is often great vitiation of the secretions, as witnessed in the prodigious accumulations of flatus in the alimentary canal, or of the limpid fluid in the stomach constituting pyrosis, or in the occurrence of the diabetic discharge, or in the deviations of the menstrual flux, increased or suppressed or changed even to the leucorrhœal fluid.

Closing this analysis I have to remark, that though towards the establishment of a diagnosis in relation to the origin of the disease in the several sections of the nervous system, no slight assistance will be afforded by diligent attention to the discriminating circumstances pointed out, these must be received with some limitations of confidence. Even when it arises in any one part, it is prone to implications, so perplexed and entangled, as no longer to be separated or traced back to its primitive source. This tendency to coalition is greatest between the affections of the spinal and ganglionic nerves—they, indeed, having seldom for any length of continuance a distinct existence, though it is oftener to be observed of the former than latter.* The most certain test of irritation of the spinal marrow is by careful percussion or pressure, or by sponging the column with hot water, sensibility being betrayed at some point by the one or other means, rather I presume of the nervous twigs supplying the processes

* Thus it will be found, that almost immediately the affections of every part of the apparatus of organic life evince such a complication. We see it conspicuously in colic, where the agony is as great in the back, as in the bowels, and relief sometimes more promptly afforded by applications to the former, than latter part.

and arches of the vertebræ and the muscles and ligaments attached to them, than the marrow itself, enclosed as it is in a bony case.

No great encouragement have we hitherto received to prognosticate favourably in this disease. Cures undoubtedly of recent attacks are often effected, and occasionally, too, in the more chronic states of it. But it as frequently, almost, has baffled our efforts, and especially where it had become fixed and confirmed. Duration, therefore, exercises an influence over the curability of the disease—and scarcely less so, determining from what I have seen, the seat it occupies, the general condition of health with which it may be associated, and above all, the cause by which it is produced, and the ascertainment of that exactly. Excepting such cases as proceed from partial and obvious injuries, I have found those of the spinal marrow to prove most certainly manageable, owing probably to the facility of detection, and the direct application of the appropriate remedies. Coming from the brain, contrary to the language of Armstrong, I have known it much seldomer relieved—and exceedingly intractable for the most part, are the affections of the ganglionic system of nerves, especially if complicated with disorder of the abdominal viscera, and the cachectic aspect, so generally concomitant on it.

Of the propitious signs, among the most so, is the regularity with which the intermittent character is maintained, denoting that the case does not arise from any immoveable fixedness of cause, and when convalescence is about to take place, it is manifested usually by a progressive lengthening of the intervals between the paroxysms, and a correspondent diminution of the intensity of suffering. The reverse in these respects is of course of opposite import.

In seeking the causes of the uncertainty and want of success in the treatment of neuralgia we shall further discover, that not less is owing to our ill-regulated practice in it, than the intractability of the disease itself. Considered as a new, and extremely anomalous affection, it was for a long time viewed mysteriously, and instead of investigating its pathology, efforts, purely tentative and empirical were made for its removal. Disappointment followed, as might have been anticipated, from such gropings in the dark, and though a better course is begun to be pursued, it is still marked rather by a propensity to multiply the means, than to ascertain the principles on which the cure should be conducted. Even up to the present moment, the medical journals teem with fresh contributions to the overgrown and redundant accumulations of remedies, with very seldom a suggestion of any value as to their peculiar adaption or the exact circumstances of their administration.

But though our skill may have hitherto been rebuked, it is consolatory to reflect, that the disease cannot be deemed a fatal one, and that it often spontaneously disappears, submitting to the resources of nature, or to agencies which we cannot supply. Numerous cases are reported which have thus passed away, after a lengthened duration of suffering, owing to a revolution in the constitution by time alone, or the supervention of some other disease, particularly the eruptive, or by a total change in the habits of life, or by a residence in a more genial climate, or by merely a shock from terror or some other powerful mental emotion.

Death rarely taking place in this disease, our information is very slender in relation to the post mortem appearances. Those which occasionally have been met with, it is difficult to determine whether they be cause or effect, or totally independent of this affection. As examples of this equivocal nature may be cited the cases lately reported by Sir Henry Halford, where he found in one an exostosis of the alveolar process—in a second, disease of the antrum Highmorianum—in a third, a large deposite like frost work on the internal surface of the skull—as well as those from other writers, such as an abscess in the frontal sinuses, or a morbid state of the foramen through which the nerve passed, or tumours and other adventitious growths of diverse kinds. Most likely all such disorganizations are rather the occasion than the consequences of the disease. Though in some few instances the nerves have been found with increased turgescency of the vessels of the neurilema, and preternaturally florid, or enlarged and thickened, there were wanting the serum, lymph, or pus, with the general changes of structure incident to neuritis. Taking the results of the whole of the dissections of which I have any knowledge, it may be affirmed, that in much the largest proportion of the legitimate neuralgic affections, no appreciable alteration existed, and which is very remarkable, considering the intensity of irritation and pain endured. Because however of no apparent, we are perhaps not entitled to infer that there were no actual changes. The nervous organization is so exquisite, that the difficulty of detecting its abnormal deviations is great, and it may be added, that the disease being mostly seated in the root, there are the derangements, which part has seldom been inspected.

In approaching the consideration of the pathology of neuralgia, I feel much of the embarrassment confessed by those who have been called to encounter the disease, or have written on the subject. Thus far however seems certain, that it commences at a point as previously described. Nor perhaps is it less true, that while the irritation has

generally a local, it may have also a constitutional origin. By Mr. ABERNETHY it is declared, "that the disease is as much so as gout or rheumatism," and indeed another respectable authority* defines it to be "a local affection having a constitutional origin." True to a considerable extent, this view cannot be received as of universal applicability. The common coïncidence of neuralgia with distemperature of system is undeniable. But whether as the cause or effect, it is in many instances difficult to determine. Be it as it may, of the precise character of the initiatory or subsequent and consequential actions we are not accurately informed. It has been surmised on a review of the mode of origin, the symptoms, the autopsic appearances, and the method of cure, that the condition varies in each particular in different cases, and in the progressive stages of the same case. Thus it is said, that though some attacks clearly arise from simple irritation, and which state is throughout undeviatingly preserved, it is equally evident that in other cases, there is occasionally inflammation of the nerves. Granting this, it still remains doubtful whether phlogosis should be deemed an essential ingredient in the neuralgic condition properly defined. That the disease may start from a point, and run its course without any cognizable degree of it, will not be denied, and such being correct, it follows that though inflammation may sometimes be disclosed, it is merely an effect of a preëxisting irritated state, or accidental in its occurrence, and not material to the disease, however it shall contribute to change its aspect, or influence the treatment. Neither simple phrenitis, spinitis, nor neuritis, present an identity with neuralgia—these affections on the contrary, when purely elementary or uncombined, displaying the most striking differences from it.

Discarding then, as not comporting with facts, the hypothesis so speciously made out by PARRY, VAIDY, and others, that the disease is caused by undue vascularity and phlogosis of the nervous tissues—and also the notion of ARMSTRONG, by whom it is referred to an essentially similar condition of the brain, I am led to the adoption of an opposite conviction of its nature. Did it consist in such a state as they have represented, it were impossible to explain the efficacy of the Peruvian bark, the Martial preparations, and the ordinary plan of treatment generally in its cure. The only distrust I entertain of the correctness of this view, concerns the state of the *punctum saliens* of the affection. Numerous examples does the history of disease supply of inflammation in the primary source and the secondary, and most ma-

* Palmer.

nifest affections though painful, and sometimes exclusively so, being destitute of it. Contemplating the pathology of neuralgia in this light, we may at least reconcile the propriety of our practice of local bleeding and counter-irritation at the primarily affected part, with the subsequent use of medicinal tonics and other means of corroboration. Carefully examined, there will be found no contradiction in the preceding statement. As offspring long survive the death of parents, so does disease the source from which it sprung. The "fons et origo" of it may become extinct, and itself shall endure in unabated force. This is indisputably true as to the neuralgic affections, and my remarks, which might be amenable to hasty criticism on the score alluded to, are vindicable as designed to apply to the incipient and ensuing stages of the disease. Commencing possibly in inflammation of the root, this ceases in the branches, which take on another and very different state, enduring indefinitely often in an independent existence. Do we not habitually witness in confirmation of it, the prejudicial tendency of those very remedies, local bleeding, &c. in the chronic disease?

But nervous irritations vary in themselves, and lead to results of infinite diversities, as is illustrated in the numerous diseases referred to them as the proximate cause. Neuralgia itself seems modified by its locations, owing probably to peculiarities in the nerves proceeding from the several centres. Between that of the face and the visceral organs, the most striking difference is observable, the one being seated usually in the cerebral, and the other in the ganglionic nerves. We see this distinction as well in the kind and degree of pain, as in the effects of remedies. To inquire into the intimate nature of neuralgic irritation, were as futile and unavailing in the present state of our intelligence, as similar scrutinies have heretofore proved in regard to other diseases. The fact is, that of the entity of any pathological condition, we are utterly ignorant, and from its subtlety will probably continue to elude our researches to all time. To say that the irritation here is *sui generis*, the language in ordinary use, is merely to repeat a barren truism, the vulgar refuge of ignorance, whose practice it is to shelter itself under the substitution of a sonorous phrase for real knowledge. Looking at its phenomena we can scarcely infer more, than that the residence of neuralgia is exclusively in the nerves of sensation, and from its analogy to some of the varieties of rheumatism, in the fibrous or exterior covering especially, having their sensibility raised to the highest pitch of exaltation, to which circumstance many of its peculiarities may be plausibly assigned—in this respect, being directly the reverse of palsy.

In regard to practical convenience, some perspicuous classification of the neuralgic affections is much to be desiderated. The most natural and advantageous, perhaps, would be to groupe them as occurring in the three great divisions of the nervous system—secondly, as confined to a single nerve or more extensively complicated—and lastly, as acute or chronic. But though such a scheme might be endeavoured, I am apprehensive, insuperable difficulties would attend its execution in the present obscurity of the subject.

The treatment of the disease in every nosological plan, must divide itself into what is proper to mitigate the anguish of the paroxysm, and in the interval, with the intention of a radical cure. Many palliatives have been proposed, as venesection, leeching, counter-irritants, blisters or caustics—lead plasters—lotions of a solution of the extract of belladonna or opium—the endermic application of the acetate of morphia—steaming, and emollient poultices—acupuncturation—compression by a tight bandage—the internal exhibition of opiates, colchicum, &c. &c. It were easy to collect proof of the occasional efficacy of each of these remedies, though the whole as frequently have proved impotent to any useful purpose. The reason of the failure of the topical means, is probably to be imputed, in part, to their being not always placed at the root of the affection, which is commonly remote from the seat of the pain. It is not easy, indeed, in any other way to reach an explanation of such opposite results as are reported of the same remedies. But there is a choice in the measures of mitigation. General blood-letting is only useful when plethora exists, or a phlogistic condition has been superinduced by cold or other causes reviving with exasperation the neuralgia, sometimes presenting a sort of mixture of rheumatism, and especially so when the large organs, or the great centres of the nervous system, are directly assailed. Leeching proves more generally beneficial, and cannot be dispensed with on some occasions, of the inflammation of the neurilema or of the nerve, and is one of the most effectual expedients in exacerbations of spinal irritation. Caustics are preferable to epispastics, particularly in neuralgia facialis, put behind the ears. By steaming the part, if there be exquisite tenderness, it may be assuaged. The only case to which acupuncturation is fitted, is where large muscles are involved, as those of the loins or hips, occurring mostly in rheumatic or gouty habits. The effect of the internal exhibition of opiates, is varied by the position of the affection. Nearly useless in neuralgia facialis, it is of the greatest service in that of the ganglionic system, and above all, in the attacks of the alimentary canal. Yet it is not without considerable power over the irritations

of the spinal nerves. From the external application of morphine, I have known some success. Great relief may sometimes be expected from colchicum liberally prescribed. But what on the whole will be found as certainly as any thing else to abate the intensity, and indeed sometimes to break down the paroxysm, is to nauseate the stomach for several hours by the tartarized antimony, or preferably, by the sulphate of copper, or by the smoking of a cigar, where the individual is not accustomed to the practice, or judging from a single instance, active vomiting, which I saw on a recent occasion most prompt and decisive. Nausea exercises an extraordinary controul over pain—it will suspend or even subdue the agony of a paronychia, and puking is admitted to be one of the best means in several of the affections, as odontalgia, hemicrania, &c. not altogether dissimilar to neuralgia, which analogies led me to this extension of the practice.

It is proper further to mention, that very lately the application of a magnet of enormous power has proved, according to European reports, wonderfully effectual in alleviating, or more decidedly controlling the disease. Trials of it have just begun in this city, and though by some it is favourably appreciated, I suspect the preponderance of evidence is against it, and that it will soon turn out to be one of those delusions so often imposed upon us, and which for a season commands too general confidence.

From a retrospect of the history of the disease, it is obvious that on account of its numerous causes, and the several conditions which it assumes, as well originally as in its progress, that no uniform mode of management in reference to its eradication, can be made of universal, or even general application to it. Called to a case, the first inquiry should be directed to ascertain the point of its commencement, and the existing state of system. Tracing out satisfactorily the source whence the irritation flows, an endeavour is to be made to interrupt the stream by cutting off the fountain of supply, and to effect which, some discrimination is demanded in the selection of measures. Thus in the event of its originating in a tooth, or the pressure of a tumour, or the frettings from a spicula of bone, or in any conceivable cause removable by a surgical operation, this is to be performed. Even the neuralgic irritations following the amputation of a limb, have in several instances been cured by a repetition of the operation. Those cases dependent on other local injuries, as slight wounds, which after healing irritate a nerve, are most effectually relieved by an application of a caustic to the part, with proper dressings to convert it into a running sore.

It were useless to go through with this class of affections. The

principle having been stated, the treatment may be readily accommodated to the variations of individual instances without any special instructions. There is however one remedy I must not pretermit, from the value formerly, and which continues in some degree to be attached to it. Not entirely with a view dissimilar to that on which the preceding measures are inculcated, it occurred to M. André, by whom the disease was probably first noticed, to divide the offended nerve. The reports of the effect of the operations were various, though from the whole it may be collected, that the failures greatly preponderated. Even when relief was afforded, it proved only temporary, and sooner or later the affection returned unmitigated. By Sir Everard Home, as well as I recollect, it was suggested that the want of permanent success in the operation is owing to the nerve resuming its functions on the reünion of its divided ends—a process he demonstrated to take place in a very short time, to obviate which objection, a portion of the nerve or a large piece of the surrounding integuments, according to the position of the affection, has since been cut away.* Thus improved, the operation is rendered undoubtedly more effectual, many cases having been recorded of entire cures from it by the highest authorities, as Haighton, Abernethy, Earl, Lisfranc, Warren of our country, &c. though its utility, on the whole, is so equivocal, that it is rarely practised. Being effectual for a time, sooner or later, here too the affection recurred in a majority of cases. That it cannot be calculated upon with any certainty is plain, other considerations aside, from the difficulty of reaching the seat of the affection, or of ascertaining the precise nerve, several branches being often simultaneously involved, and in a more general view its value is diminished, it being susceptible of application to only a small number of cases. Nevertheless, since it has sometimes accomplished cures, it may still be held in reserve for those emergencies where other resources have been exhausted, and it can safely be attempted.

Governed by the presumptive origin of the nerves concerned in neuralgia facialis, the proper treatment will consist in repeated topical bleeding around the neck from ear to ear, or down the cervical vertebræ, and then of issues by the vegetable caustic, or the moxa, in the same position—and I think I have found the latter more useful when put over the mastoid processes of the temporal bone. No less

* Lisfranc has reported a case of neuralgia of the pericranium, occasioned by external violence, which he completely cured by removing a portion of the integument of several inches in extent, embracing the entire seat of the affection.

serviceable are these means in that modification of the affection imitative of hemicrania. The efficacy of this treatment in both instances I might readily illustrate by some striking examples, could I spare the space for their admission.

No doubt can now be entertained that a common source of neuralgia, confined to a single part, or in its fluctuations attacking many parts, or at once widely pervading the system, has its origin in spinal irritation. The remedies are topical bleeding and blistering, or issues, with a state of absolute rest. As to the last, I am aware that there is some difference of opinion—but from à priori reasoning, strengthened by actual experience, I have long been convinced that under all circumstances of an irritated spine it is indispensably necessary to a cure.

Nearly the same course is to be pursued in the affections of the grand sympathetic nerve, where such betray any intensity of irritation, or phlogosis, however slight, and it ought to be known, that applications to the spine are, in some instances, more effectual here, than to the abdomen, or directly over the organ assailed.

General bleeding in neuralgia I have found rarely of service. Even where decided inflammation prevails, it is usually local, and proves more submissive to remedies addressed immediately to the part. Yet the affection may be complicated with constitutional excitement, adventitious or otherwise, and in such a state the treatment must be correspondently accommodated.

Entertaining different pathological views, Cotugno, Armstrong, Piorry, and several other writers, urge with great earnestness the depletory and antiphlogistic plan to the fullest extent in the disease. But on trial the practice has been found as unsuccessful as the speculation from which it is deduced is deemed erroneous, and by very general consent it is now limited to the purpose and condition indicated.

Hitherto I have presumed an integrity of the system at large—but as we have seen, this is very much the reverse, or it is mostly disordered in diverse modes and degrees. Before, therefore, instituting any practice regarding the neuralgia itself, that state of system originating it, or by which it is maintained, is carefully to be examined and rectified, which being accomplished, then a recurrence may be had to tonics, with some reasonable prospect of success.*

Of the tonics, perhaps, the best is the subcarbonate of iron.

* It would be alien to my purpose to treat on this occasion of the modes of correcting the various pravities of system associated with this disease. Derange-

This article in enormous doses, from a drachm or more, several times a day, was some years ago introduced by Mr. Hutchinson of England, and its utility verified by a host of practitioners. It has since lost some credit, to be ascribed perhaps in a degree to its general and vague employment. On what principle it acts is not exactly determined. As a tonic merely, its effects cannot be explained, and I am inclined to refer them to that property of lessening sensibility which it evinces in most nervous affections.

The nitrate of silver operates seemingly in the same mode, and is worthy of attention. Equally perhaps is the superacetate of lead and the preparations of zinc, though I have not heard of any fair trial of them.

The subnitrate of bismuth is not undeserving of regard, especially in the ganglionic affections. Experiments should be made also with the powder of nut-galls. Directly applied to an exposed nerve of a tooth, it so wonderfully deadens its sensibility, that it may be stuffed without pain, and hence it promises some advantage when internally administered, particularly in neuralgia of the stomach.

It is to be supposed, in a case attended by such acuteness of pain, the narcotics have not been neglected. Every one of them, on the contrary, has been abundantly prescribed, and excepting the stramonium and belladonna, the whole are now repudiated. By Marcet, Bigbee, Elliotson, &c. the strongest testimony is borne to the former, and the latter is not less sustained by the reports of Bailey and other authorities. But I have derived little advantage from either of these, or any other of the class. Combined with quinine, their powers appear in some instances to be improved.

Neuralgia of a decidedly intermittent type, by whatever causes induced, whether malaria or other agencies, exacts those remedies which experience teaches interrupt most certainly paroxysmal tendencies. Copious as this catalogue of medicines is, I believe that the confidence of practitioners is now mainly reposed in the Peruvian bark and its preparation, the sulphate of quinine, *par excel-*

ments of the digestive functions will be found greatly to preponderate. As a course appropriate to a large majority of such cases, with a design especially to the correction or restoration of secretory power, the important end to be attained, I have to say, that incomparably the most effectual process, according to my experience, is to administer a few grains of the blue pill at night, to be worked off by a wine-glassful of the annexed mixture in the morning:—℞. Infus. tarax. ℥iv.—Extr. tarax. ʒij.—Carb. sodæ, ʒss.—Tart. potassæ, Tinct. rhei, ää. ʒiij.

*lence,** and in those of arsenic, particularly the arsenite of potash, which however I am sure is less active than the white oxide. The sulphate of copper has, perhaps, claims to attention, it having in one case under my care proved serviceable, where the other articles were nugatory. Nor ought the oil of turpentine to escape notice. It evinces considerable power over common intermittent habits, and we have some evidence of its utility in neuralgia sciatica especially.

Devoted as modern practitioners are to the employment of mercury, it can hardly be presumed that an extension of it has not been made to the disease under review. The trials of it in this country at least have been numerous, and I am afraid very discouraging. Except for the purpose of correcting certain vitiated states of system, generated chiefly by miasmatic influence, and here rather to its alterative than salivant effect, it seems to me that every other application of it must be inapt and prejudicial. Yet there are several cases reported as cured by a salivation. Led by some supposed analogy in their effects to mercury, the preparations of iodine have been resorted to in this disease, and with reputed success. But I confess that I have never witnessed any benefit from them, and am disposed to doubt altogether their efficacy.

Emetics, which we have learnt are probably useful in the paroxysm, are, I think, certainly so in regard to the removal of the disease. It is thirty years since I first employed them, and though they have often disappointed me, I have sometimes derived signal advantage from them. As they operate in the extermination of inveterate intermittents, so do they probably in the neuralgic affections. The case to which, according to my experience, the practice is best fitted, is where the pericranium becomes permanently tender with darting pains through it.

Connected with a gouty or rheumatic habit, regard should be paid to this consideration in the management of the case. It is under such circumstances, I suspect, that colchicum, which has acquired much confidence in neuralgic disturbances, is serviceable.

* This article is usually directed in too small doses, and hence probably one cause of its frequent failures. The foreign practitioners prescribe it far more liberally in this disease than we have generally ventured to do—some of them even in prodigious quantities. Not less than five grains, repeated several times a day, should be given. Combined with the dulcified spirit of nitre, and a little laudanum, its unpleasant effects are obviated. Thus united, I have seen my friend, Dr. Mitchell of this city, give a scruple of it at once in intermittent fever with the happiest effect.

It remains to mention electricity, galvanism, and magnetism. These agencies were at one time in considerable repute, which on a fair and more extensive trial, appears not to have been justified. Galvanism in a different mode of application, has, however, recently been very triumphantly directed by my friend Dr. HARRIS, in three cases of the disease. The mode is that recommended by MANSFORD, in epilepsy.* But here too, disappointments have been more fre-

* "It was said, that in order to fulfil the indication stated at the commencement of this section, it was desirable to establish a negative point as near the brain as possible, and a positive one in some distant part of the body. (*a*) Accordingly, a portion of the cuticle of the size of a sixpence being removed by means of a small blister on the back of the neck, as close to the root of the hair as possible, and a similar portion in the hollow beneath, and on the inside of the knee, as the most convenient place: to the wound in the neck, a plate of silver, varying according to the age of the patient, from the size of a sixpence to that of a half-crown, was applied—having affixed to its back part a handle or shank, and to its lower edge, and parallel with the shank, a small staple, to which the conducting wire was fastened. This wire descended the back till it reached a belt of chamois leather, buttoned round the waist—it then followed the course of the belt, to which it was attached, till it arrived opposite the groin on the side it was wished to be used; it then passed down the inside of the thigh, and was fastened to the zinc plate in the same manner as to the silver one. The apparatus so contrived was thus applied:—a small bit of sponge moistened in water, and corresponding in size to the aperture in the neck, was first placed directly upon it—over this a larger piece of sponge of the same size as the metallic plate, also wetted, was laid—and next to this the plate itself, which was secured in its situation by a strip of adhesive plaster passed through the shank on its back, another above, and another below it. If these be properly placed, and the wire which passes down the back be allowed sufficient room that it may not drag, the plate will not be moved from its position by any ordinary motion of the body. The zinc plate was fastened in the same manner—but in place of the second layer of sponge, a bit of muscle answering in size to the zinc plate was interposed: that is, a small bit of moistened sponge being first fitted to the aperture below the knee, the piece of muscle (*b*) also wetted then followed, and on this the plate of zinc. The apparatus thus arranged will continue in gentle and uninterrupted action from twelve to twenty-four hours, according to circumstances. This last is the longest period that it can be allowed to go unremoved: the sores require cleaning and dressing, and the surface of the zinc becomes covered with a thick oxide, which must be removed to restore its freedom of action; this may be done by scraping or polishing: but it will be better if removed twice a day, both for the greater security of a permanent action, and for the additional comfort of the patient."—*Mansford on Epilepsy.*

(*a*) The hypothesis from which this practical expedient is deduced, supposes an undue accumulation of electric matter in the brain, at the expense of other parts of the body, and hence the cure depends on equalizing the distribution of it.—N. C.

(*b*) Either a piece of soft buckskin or parchment is equally effectual, and less offensive than the muscle.—N. C.

quently experienced, as indeed was to be expected from the diversities of the disease. He tells me that it has only proved effectual in the affections of the face.

As enumerated, such are the remedies in neuralgia, which in various degrees, retain the confidence of practitioners. My aim in the preceding therapeutic discussion, has been to make as just and discriminative an appropriation of them to the several forms and conditions of the disease as I could accomplish. It is not however to be understood that this distribution of them is absolute or exclusive. The general condition being favourable, several of the tonics especially are suited to a wider application than given to them by me, and I have reason to think, that in some instances, the sulphate of quinine and the carbonate of iron united, are more effectual than either article separately. But every thing connected with the disease is so obscure—its causes, its seat, the precise pathological state in its several modifications, that I am sensible I have not been very successful in the attempt. Nor do I believe, at present, it can be done. To a certain extent we may be governed by principle in the treatment, or in other words, having carefully studied the case, adapt the means with exactness to the views adopted of it. But in other instances when dark and involved, we shall be forced to depart from this order, and plunge into the devious path of empiricism, which I have endeavoured to avoid, prescribing vaguely or without any rational guide.

With a few remarks on regimen, I shall close this disquisition. To diet not much importance has been attached. But varied as are the forms of the disease, and the state of the system with which it is associated, surely some discrimination is demanded. Generally speaking, nutritious animal food of light and easy digestion answers best, and is indispensable in feeble and exhausted conditions, especially should depravation of the stomach and subsidiary organs exist. On the contrary, cases of a different character are presented, where to a full and phlogistic diathesis, there is united the highest possible degree of local irritation, as is strikingly exemplified in many of the spinal affections. Common sense here dictates a considerable reduction in the course of living.

The same accommodation to circumstances is to be observed in other respects. Exercise, or even a journey operating in part by a change of air and certain moral influences, is highly beneficial in many instances, while in others, aggravated as they must be by motion, it is altogether precluded. There is a maxim of universal application. Let the regimen be such, as shall harmoniously coöperate with the general plan of treatment.

Connected as this disease commonly is, with constitutional disturbance, there is forced upon us the value of regimen, and some other analogous means of cure, among which is a resort to our mineral springs, and particularly to the thermal waters of Virginia. Miraculous almost in the relief they afford to arthritic, rheumatic, and the affections generally having a resemblance to neuralgia, it is presumable that they would also act favourably in it.* Combined with a bath of unequalled excellence, they offer the perfection of climate as regards alike comfort and salubrity, with every social advantage, elegance of entertainment, and delightful recreation for body and mind. These are strong recommendatory considerations, not heedlessly to be disregarded.

Annexed will be found some cases, selected out of a large number which have come under my own observation, as the best adapted to illustrate the mode of origin, and treatment of the neuralgic affections.

Cases dependent on irritation of the teeth.—Case I. In 1815 I was consulted by a lady in this city, who for the several preceding years had suffered excruciating agony in her face—at first at distant intervals, gradually becoming more continued. Convinced of the neuralgic nature of the case, as well by the character of the pain, as the total absence of inflammation in the attacks, and suspecting a tooth to be in fault, I had her teeth repeatedly examined by a skilful dentist, without, however, his detecting the slightest defect, or even *any increased sensibility* in any of them—the whole appearing, on the contrary, remarkably sound and beautiful. But finally, on chewing a crust of bread, one of the cuspidati was broken off, exhibiting an entire decay, with the exception of the enamel, which was perfect. The stump being extracted, from that moment she experienced not the slightest uneasiness of the kind.

Case II. Not long afterwards, a lady from Virginia, who had been afflicted for a lengthened period in the same way, came under the care of Dr. Physick and myself. Though she could never trace the pain of the face to her teeth, perceiving two of the front ones nearly destroyed, we had the roots taken out, and a permanent cure ensued.

* What has been thus advanced conjecturally, I find, by a recent publication, is confirmed as to the decided efficacy of similar baths on the continent of Europe. To bathing may also be added the use of *douches*, by which is meant the projection of water on the affected part, from a height through tubes of various calibres.

Case III. More recently, a lawyer from Maryland consulted me for a similar affection, by whom I was informed that for upwards of three years his agony had been so frequent and intolerable, that he was forced to abandon his profession and all other business. Excepting an eye-tooth, the root of which only remained, the rest were in the finest condition—to the extraction of which fragment, he at first objected, as it had never given him any inconvenience—but labouring under an attack at the time, he speedily consented to its removal, and the operation was productive of entire success.*

Cases proceeding from diseased vertebræ.—Case I. My attention was first awakened to this view of the origin of neuralgia by the case of a boy, whom I was attending for an enlargement of one of the dorsal vertebra. Each day, precisely at noon, for more than two weeks, he was attacked with violent, acute, lancinating pain of the true neuralgic kind, through his bowels, continuing for several hours, without any mitigation from remedies the best calculated to relieve the affection, had it been primarily seated in the intestinal tube, or of the nature of colic. Baffled in this way, it at length occurred to me, that all this suffering might be owing to spinal irritation, and acting under such a conviction, a treatment, consisting of an application of leeches, &c. was instituted with the happiest result. As confirmatory of the accuracy of my estimate of the case, it should be mentioned, that several times during the protracted confinement of the boy, whenever indeed any exasperated spinal irritation took place, manifested by an increased tenderness of the diseased vertebra, there was a return of the same sort of intestinal pain, and as readily submissive to similar means.

Case II. During the present year, I attended in consultation a young lady, who, for several months previously, with the most indomitable constipation of bowels I have ever known, had constant acute, lancinating pains through the chest, in the direction chiefly of the intercostal muscles, extending occasionally to the head. On examination, two of the dorsal vertebræ betrayed considerable tenderness, without, however, the slightest protuberance or appearance of inflammation at these points. The case was, therefore, deemed one of simple spinal irritation, in which both the nerves of sensation and

* It is a curious fact, that in all the cases of dental neuralgia which I have seen, the tooth itself supplying the irritation evinced no increased sensibility. Nor have I ever seen the disease connected with the molares.

motion were concerned. By rest in bed, frequent leeching, and moxa issues,* she so far recovered as to lose all pain, and with such an amelioration of the state of the bowels, that they were readily opened by the mildest enemata. Continuing progressively to improve for some weeks, she then unfortunately quitted the recumbent posture, and engaged in too active exertions, from which a relapse ensued with marked aggravation. The vertebræ now were found enlarged and thickened, and in addition to the former affections, a partial paralysis of one of the lower extremities had taken place.

Case III. But the most interesting instance I shall now relate, that of a lady from Georgia. Becoming my patient, she told me, that for several years she had been afflicted with pains in nearly every part of her body, and so exquisitely poignant, as scarcely to be endured, and that she had sought relief to no advantage from some of the ablest physicians at home and in Europe. My attendance was very short before I discovered her deplorable condition. By day and by night was she tortured by neuralgic pains in the head, as clavus hystericus, or in the chest, by rapid and repeated dartings through the lungs or heart, or diaphragm, attended with such embarrassed respiration, as not to admit of the recumbent position—or at other times entering the abdomen, affecting in a like manner successively the contents of that cavity, or leaving the interior, fixing, for a while, on the lower extremities. As a harpey, had the disease thus preyed upon her, and she was wan, haggard, and emaciated, with great irritability of stomach, loss of appetite, and weakened and vitiated digestion.

Different notions had been entertained of the case by her medical advisers—some considering it as dyspepsia, and others as chronic hepatitis, or rheumatism, or gout, or angina pectoris, prolapsus of the uterus, &c. according to the predominance of the symptoms at the

* The common practice of establishing issues immediately on each side of the affected vertebra is bad. They should be placed some inches from it, and the same remark applies to leeching. Being near to, or in contact with it, instead of operating as divellents or counter-irritants, they may have a contrary effect, exacerbating the irritation of the spinal marrow: but especially the intensity of inflammation, which is so apt to follow caustic issues, should be avoided. By this circumstance alone, I have, in more than one instance, seen neuralgic pain, and the paralytic state, conspicuously increased, and each again relieved, on the reduction of the inflammation, by emollient poultices, &c. Moxa issues are greatly to be preferred to those produced by any other means. They are less painful, more manageable, and decidedly of superior efficacy.

time. But on my very first visit, I was satisfied that such a train of phenomena could only be referred to spinal irritation, in which impression I was confirmed by the detection of an enlargement of the last of the dorsal vertebra, with tenderness on pressure of the spinal column to some extent. By confinement to her bed, and measures mainly addressed to the local affection, cupping, leeching, and blistering, sufficient alleviation was early procured to encourage a persistence in them, and at the expiration of several months, not a vestige of the disease remained.

Cases without such obvious lesions of the spine.—Case I. Three years ago, a middle aged man called on me for my advice in relation to an inveterate neuralgia of the face, shooting in various directions from the ear through the jaws, up to the top of one side of the head—for the cure of which, much in vain had been previously done, and among other unavailing means tried, was the extraction of several teeth. By percussion and pressure a very great degree of sensibility was revealed about the first of the cervical vertebræ, followed instantly by darting pains in the courses already mentioned. No doubt could longer be entertained of the primary seat, or of the nature of the affection, and by repeated leechings around the tender point, and moxa issues over the mastoid processes of the temporal bone, he ultimately got well.

Case II. Nearly about the same period I was called to a very young lady from the south, who had been previously attended by another physician for several months. It appeared from the history of the case, that she had led a gay and fashionable life during the preceding winter in a neighbouring city, by which her general health had become extremely impaired. The earliest symptoms were those of anorexia, irritable stomach, defective digestion, and costiveness, with head-ache, acute pain in the direction of the intercostals, and above all palpitations of the heart, shortness of breathing, and a sensation as she expressed it, "of sinking or giving way" in the epigastric region. By the time I saw her, these symptoms had reached an exasperated state, and there were added to them, the alternation of menorrhagia, and leucorrhœa to excess, with weakness of the loins, and unremitting dull ache in the lumbar portion of the spine, attended by a bloated, exsanguineous aspect. Learning that she had been in the habit of lacing her corsets very tightly, I at once suspected that this was the primary cause of all the mischief, having seen it produce the same effect in some other instances, by an injury of the

spine. Tenderness in two-thirds of the dorsal section of the vertebra was discovered.

As the loss of blood seeming inadmissible in such a leucophlegmatic condition, I substituted a repetition of dry cupping and blisters over the sensitive part, gave a small quantity of the blue pill at night, and the taraxacum mixture in the morning to promote the secretions, which end having been attained, she was put on the use of the phosphate of iron, united to a small portion of aloes to keep the bowels open. These remedies, with a state of rest, and a nutritious diet carefully regulated, by degrees so far abated the topical affection, and restored her general health as to enable her to go to the country, where, using moderate exercise, she entirely recovered.

Case III. Last spring I saw a married lady from the country, who had come to consult me for what was apprehended to be the commencement of a cancerous affection of the left mamma. During the winter she had felt much soreness in it, with sharp, darting pains through it into the axilla, down the arm, which was also slightly numbed, occasionally extending upwards so as to involve chiefly the pericranium. The case had been thought to be rheumatism, and was treated by leeching, blistering, fomentations, to the breast itself, and by enveloping it in fur. These measures having failed, the more alarming view mentioned was taken of it, and in this state of mind she applied to me. Excepting great tenderness, I could perceive nothing abnormal in the breast. It was soft, without any tumour, or even the slightest change in the lymphatics. But on pressure it proved to be very sensitive, and a manifest increase of the shooting pains instantly followed. Though no appreciable degree of sensibility was evinced in any part of the spine, I so strongly suspected the whole affection to proceed from irritation of the cervical portion of it, that I determined to treat the case under such a view. Encouraged by the success of a single leeching and a blister to the neck, these were repeated several times, when all the symptoms had so much subsided that I permitted her to return home, and not hearing from her since, I presume they totally disappeared.

Cases of ganglionic irritation.—As remarked on a former occasion, such is the tendency of the different classes of nerves, and especially the spinal and ganglionic, to participate in each others sufferings, that instances of neuralgia of a distinct and independent existence in any of them, are seldom to be met with. Most of the preceding cases afford illustrations of this complication. The reverse, however, does

sometimes happen, and perhaps the following may be deemed examples of a separate and exclusive lesion of the ganglionic nerves.

Case I. An elderly gentleman from Louisiana, came hither in 1828 to consult me about his health. The account which he gave of his case, was that though he resided in a miasmatic district of country, he had entirely escaped intermittent and other autumnal fevers which for several seasons had there been generally prevalent. But in place of these, two years before, he was suddenly seized without any obvious cause, with cramps of the stomach, which returned daily, and then every third day exactly as to the hour for several weeks. To these spasmodic affections succeeded darting, poignant pains through the hypochondria, in the region of the kidneys, and of the bladder—sometimes in the one, and at other times pervading more or less the whole, the disease gradually losing the character of periodicity, so that the attacks reverted very irregularly. The case had perplexed various physicians exceedingly, having been considered as gout, chronic hepatitis, nephritis calculosa, stricture of the urethra, &c. Being satisfied on a careful perquisition, that these conjectures were incorrect, I inclined to believe that the case was of a neuralgic nature, originating in miasmatic influence, and the more so from having seen during the prevalence of epidemic intermittent fever among us, which abounded in anomalies of all sorts, not a few similar instances. No tenderness, however, could I detect in any part of the spine, nor were there any symptoms referable to that source of irritation.

Correcting the disorder of the chylopoïetic viscera, which was conspicuous, by an alterative course of the blue pill, and the occasional interposition of a purge, I then administered largely the sulphate of quinine alone, and with the piperine. These remedies were useful, though not decisive, and I next resorted to the sulphate of copper, which completely put an end to every affection.

Case II. Not two months ago, a gentleman from the interior of this state, called on me for my advice, who had the aspect of even robust health. He was muscular, florid, and apparently with entire integrity of constitution—but he complained of having for a considerable length of time suffered severely once or twice a week by spasms of the stomach and bowels, with occasional darting pains throughout his abdomen. These were the only symptoms mentioned, and I found on witnessing several attacks, that he had accurately stated his case. No reason existed to suspect gout—his digestion was good, the bowels sufficiently open, and the evacuations natural in quantity, colour, and consistency. The case struck me as compounded of

gastrodynia and enterodynia, or a painful irritation confined to the ganglionic nerves expanded over the surface of the alimentary canal. His spine betrayed no tenderness, and he never referred any of his sufferings to that part. Before I saw him, he had been treated by general and local bleedings, by counter-irritants to the epigastrium, and by opiates and various antispasmodics, without however any permanent benefit. As his circulation was active, with some tenderness over a greater portion of the abdomen, I took from him by venesection and repeated applications of leeches to the tender part, as well as to the spine, about sixty ounces of blood. Though the force of vascular action was sensibly reduced by this depletion, there was no mitigation of the tenderness or other improvement. The attacks, indeed, recurred oftener and more violently. After an ineffectual trial of several remedies, I directed the sub-nitrate of bismuth and opium united, which for a time seemed to answer well: but ultimately ceasing to do good, these articles were discontinued, and in place of them, ten grains of the sub-carbonate of iron were taken every fourth hour. His cure henceforward rapidly advanced, and in three weeks I dismissed him well.

In dismissing this case, I cannot forbear to remark, that the Martial preparations, and especially the sub-carbonate of iron, I have found chiefly serviceable in the neuralgic disturbances of the stomach and bowels. I shall add only one other case, to show the connexion between the disease and arthritic irritation.

Early last spring, a gentleman beyond the meridian of life, of very gouty habits, was suddenly attacked with the most excruciating pain mainly in the direction of the frontal sinuses. But it occasionally extended to the side of the face, and even to the scalp, sweeping sometimes around the ear, and darting also, into the eye. The paroxysms uniformly occurred about 4 o'clock in the morning, lasting on an average two hours each attack, and then gradually abated, till an entire subsidence took place. General and local bleedings, vesications, opiates, and other narcotics, administered internally, and endermically applied, were of little service. From the paroxysmal nature of the affection, and the absence of fever, I resolved to try the tonics, and accordingly, the sulphate of quinine, the arseniate of potash, and the sulphate of copper, separately and united, were freely given, and for a time with some advantage: but they soon lost their efficacy, and the disease becoming still more afflicting, the whole of these remedies were abandoned. It now happily occurred to me to use the tincture of colchicum, and as a purgative at the moment was required, I

prescribed it in combination with calcined magnesia and the sulphate of magnesia. Much relief was afforded on the operation of the mixture, and by continuing the colchicum itself in such doses as to keep the bowels well opened, he very rapidly recovered. Though subsequently he has had several admonitions of a repetition of the disease in the same part, a recurrence to this medicine has uniformly obviated an attack, and it may deserve to be noticed, that during this period there has been a greater exemption from gout, and the enjoyment of better health than for many preceding years.

Most of the cases I have recited, it appears, were treated successfully. Let it not, however, be supposed that I mean to vaunt of my pretensions to any superiority of skill in the management of this disease. It were easy for me to present numerous instances of it in which all my efforts were baffled, and where the mortification was felt of surrendering up the patient without having mitigated his distress in the slightest degree. The fact is, that recent neuralgic affections occurring in a sound constitution, and especially when originating in spinal irritation, of which character was a large proportion of the cases I have adduced, will prove tractable to a practice regulated by judgment and discrimination. But very much reverse does experience teach is the result in relation to such as arise from certain causes, or are connected with particular lesions, or with depravation of the system, or have become inveterately fixed by duration only. Chronic degenerations, under all circumstances of disease, are difficult of removal, and as to the neuralgic affections, in this state, my own endeavours have so often failed, that I am prepared to pronounce them almost insuperable. My only object in the publication of these cases, is to lay before the profession a series of facts concerning a disease of extensive prevalence among us, deeming them calculated as well to shed some light on its nature and treatment, as to encourage others to investigations and discoveries to overcome this, one of the most excruciating maladies which afflicts mankind. That they are imperfectly related, I am aware: but having designed them merely as illustrations of a lecture on the subject of neuralgia, an occasion where minuteness of statement is to be avoided, I have preserved only summaries, and it were vain now to attempt to supply deficiencies by an appeal to my memory for accurate details after such a lapse of time.

ART. II. *Reports of Cases treated in the Baltimore Alms-house Infirmary.* By JAMES HENRY MILLER, M. D. Physician to the Institution.

WIDE as the field of science has been expanded by the number of recent discoveries and the extent of modern improvements, still it is but too justly alleged that they have availed very little in practical utility. Physiology has been highly endowed by contributions from the collateral sciences, yet pathology cannot boast a comparative amount of acquisition. The former has placed many of the agents of nature under requisition, and derived from their aid much valuable aid, whilst the latter has stood in idle astonishment and profited nothing from observation.

A considerable period has already elapsed since galvanism has been made to arouse dead muscle into action through the intermediation of the nerves, and even yet application of this power has been made towards the restoration of fibres that are only diseased. The world generally is acquainted with the startling phenomena afforded by the infusion of this fluid into animal structures, and is eager in its inquires why we do not employ it to remove some of the opprobia that still disgrace our practice. We are upbraided for our remissness in prose, and satyrized in poetry for our culpable inertia.

* * * * * Galvanism has set some cases grinning,
But has not answered like the apparatus
Of the Humane Society's beginning
By which men are unsuffocated gratis.

It being admitted that this modification of electricity is capable of substituting in some manner and measure that principle, whatever it is, which ordinarily acts through the nerves, it is legitimately inferable that it may be converted into a most energetic therapeutic agent. That it has not insinuated itself into general practice, is probably owing part to the obstacles always set up before every new article, and also from the timidity, arising from a knowledge of its potency, which deters from its employment. Prudence in the use of any new and especially a very active agent of the materia medica is unquestionably commendable; however, whilst temerity is to be deprecated, assuredly that timidity which would refrain from rational experiment when opportunity is presented, and when neither risk or injury is to be hazarded, and where beneficial results are confidently to be hoped, is not only despicable but highly criminal against the best interests of humanity.

Public receptacles of the sick yield advantages, facilities and privileges, to innovate and improve remediate means unenjoyed in private practice, and it is undoubtedly the duty of the medical officers of these institutions to cultivate the resources of science, and offer the fruits to the acceptance of the profession. With these impressions the following cases are presented, and also in the hope that they may perchance emit some additional light upon the qualities of this new article of the materia medica, or perhaps suggest some slight clue to unravel the still bewildered pathology of one of the most distressing of our nervous affections.

Case I. *Paraplegia.*—Michael Mullen, an Irishman, twenty-six years of age, was admitted, June 12th, 1833, with paraplegia. He says that until about a year since, when he was attacked with fever and ague and the subsequent paralysis, his health had always been good; that his athletic powers had uniformly been adequate to the procurement of his subsistence by hard labour; and that since his arrival in this country he had been chiefly employed upon our roads, canals, and other public works, where he received full wages as an able-bodied hand. He is very pale, and although of the sanguine predisposition, his countenance exhibits the blank expression of want of hope; he is greatly emaciated, suffers occasional returns of chills and fever, and in the intervals his temperature, and especially of the lower extremities is below par; his appetite is precarious; bowels torpid; tongue small, sharp, and slightly furred; pulse frequent, small, and weak. There is a considerable distortion of the spine, presenting the appearance of a well-defined tumour of three inches diameter at the base and about one inch and a half in height with a scale on the apex. From this tumour there is no discharge of pus, sanies or other fluid. Its location is at and over the fifth and sixth dorsal vertebræ.

He is incapable of giving any account of the origin of his hunch, "for," says he, "it has been there ever since I can remember, and long before, and may be was born with me." He avers that it never occasioned him any pain or other inconvenience, until during his confinement by the fever last year, when for the first time he began to experience soreness and pain in the part, but which was at the time attributed to the erosion and inflammation arising from his position in bed and the undue amount of friction made upon it as the most prominent part. With the progress of the ulceration of the hunch he perceived a gradual diminution of sensibility and motion of the lower extremities until it terminated in an entire loss of both sensation and motion. The paralysis is now so complete that he can feel neither pinching, puncturing, cauterization, or any other stimu-

lating contact; nor can he by the utmost effort of volition contract a single fibre of any muscle of the lower extremities. He distinctly recollects that during the subsidence of the powers of his inferior half, he occasionally suffered pains of various and indescribable kinds in his back, sides, hips, thighs, &c. and although much less frequent and intense, they still torment him in the pubic and iliac regions, and also along the upper part of the spine. Doubtless, a portion of this suffering is attributable to the condition of the bowels, because it is always greatest where they are constipated.

His rectum and bladder still acknowledge their alliance to the dominion of his will.

It does not appear that his alimentary tube and its collatitious viscera have sustained any impairable injury, although they are all evidently indolent, and require occasionally to be urged to duty. The fever, a tertian intermittent, has never been subdued, and seems merely to acquiesce in a reluctant truce.

We are unable to extract from him any satisfactory information as to the treatment which he has undergone. Almost the only things of which he declares he is very certain, is, that he has taken a great deal of mercury; has been salivated more than once; has taken a great deal of Queen Ann, (quinine;) has been repeatedly blistered; "and swallowed a heap of doctor-stuff more."

Our attention was first directed to the removal of the intermittent, which was readily accomplished by obviating the torpor of the viscera, interrupting the habits of the disease, and corroborating the assimilating apparatus. All this was effected by the ordinary means in about a fortnight. Having reëstablished order amongst the nutrient organs, we next began to institute efforts to repair the locomotive machinery.

Believing the paraplegia to have arisen from an inflexion of the spinal cord from its ordinary line of direction, by alteration of structure resulting from the fever, and also in part from the long continued pressure of the body upon the more protruded portion, by which a permanent compression on the medulla spinalis had destroyed the function of the lower part, and consequently the nerves passing off from it to the inferior extremities: therefore to obviate this mechanical cause of the disease, he was placed upon an inclined plane, so adjusted as to support the upper half of the body, and allow the lower parts to be freely suspended by their own weight. This position was soon found to afford him very great but undefinable relief. He seemed solicitous to express the kind of benefit derived from this

new situation, but failed in words to communicate his ideas. It was not a relief from pain, because the parts were incapable of suffering; nor was it a restoration to pleasurable sensation, because they still remained insensible; but it was a feeling of liberation from confinement without the power of exerting or enjoying liberty; a satisfied freedom from constraint without the disposition to action.

Free as the nerves now evidently were, they continued inert. Hoping to stimulate them to a resumption of official acts, various plans were instituted, and nearly every proposed remedy was tried, yet all were unavailing, except so far as that under these varied prescriptions; regard was had to the preservation and perfection of his general health, which continued improving, and the ulcer upon the apex of the curve of the spine cicatrized pretty firmly.

Having exhausted all the ordinary resources of art, and still believing that if by any agency the nervous power could be reinstated or determined to flow in its former channels, locomotive life might be restored to the paralysed limbs, and knowing the effects produced by galvanism in many physiological experiments, and that it had been suggested as a remedy in affections of this kind, we prepared for its administration.

September 6th. Having during the night procured vesication to the desired extent upon the back of the neck and on one of his legs, the galvanic apparatus was applied.

The mode of application although not new, may not perhaps be familiar to all. It is this: remove a portion of cuticle by means of a blister from two portions of the body on which it is designed to act, sufficiently large to afford a basis on which to place the piles; these are composed of a flat piece of sponge, an equal portion of fresh muscle, of beef, mutton, pork or other butcher meat, and the metallic plates, one made of silver and the other of zinc. These plates are elliptical, the ordinary diameter about two inches, the conjugate about one and a half, they are made button fashion with an eye in the centre, for the convenience of attaching the connecting silver wire. On the denuded surface place the sponge saturated with a solution of common salt in water, over the sponge place the layer of muscle, and upon the muscle place the plate, into the eye of the plate fasten one end of the wire, then confine the whole firmly upon the part by bandages or adhesive strips. The silver plate is to be placed nearest to the origin, and the zinc one at the termination of the nerve.

In a very few minutes after the adjustment of the apparatus, we were gratified with the observation of a remarkable alteration in the state

of the circulation, and the temperature of the paralysed limbs. The pulse which had fluctuated between 96 and 112, became pretty stationary at about 88.

The temperature which previously had been as low as 62° of Fahrenheit's thermometer, in a very brief space of time arose to 89° At first the galvanic apparatus was applied and retained two or three times a day, and for only half an hour at a time. Finding that the temperature, circulation, and general sensations were always greatly improved during the application, and that in the intervals some portion of the good effects were lost, it was afterwards kept in pretty continuous operation. In a few days we were cheered by a very obvious amendment, his sensibility in the hitherto insensible parts began to dawn, and the mobility, although very slight at first, soon became very obviously perceptible.

18*th.* Galvanism continued; alternately shifting the zinc pole from leg to leg. The strength, especially about the loins, is decidedly increased, insomuch that he is able to aid in the change of position.

It may not be unworthy of note, that shortly after the resort to galvanism, and after the patient began to give utterance to reviving hope of recovery, to determine how much of his improvement might be attributed to his faith in the novel expedient, and how much might rightfully be accredited to the galvanic fluid, we inverted the poles, without the patient's knowledge, when he immediately began to respire with great anxiety, and complain of an inversion of all his bowels threatening suffocation, or as he expressed it, "a rising up from the bottom of his belly into his throat, and bringing on a sickness of heart." He became very importunate to have the plates removed, as they gave him a great deal of a new kind of pain, and declared that they had never before effected him thus, and that if they were not instantly taken off they would kill him. Fearful of carrying the experiment too far, yet without any intimation to him, they were restored to their former situations, when he instantly desisted from his complaints, and stated that every thing was right again.

23*d.* Owing to the absence of the student who had the especial care of this case, for three days past the galvanism has been discontinued, and the patient has evidently retrograded. He now complains of coldness of the legs, general uneasiness, and loss of appetite. Renew the blisters, and then reäpply the plates as heretofore.

26*th.* Is again better.

28*th.* The heat of his limbs has been gradually increasing since the last application, and is again at 89°, which seems to be the maxi-

mum point. His strength is also returning, and is nearly equal to what it was before the discontinuance of the galvanism.

October 1*st.*—The plates are retained on day and night, with the most obvious advantage in every respect.

8*th.* The plates have been kept on constantly, except the short periods requisite for refitting. The mobility of the limbs has so much increased that he can throw them about with great ease.

22*d.* The recent atmospheric vicissitudes have induced a catarrh, from which he suffers considerably. He has pain in the side, stitches in the breast, and great soreness of trachea in respiration. ℞. Sulph. magnes. ℥iss., Antim. tart. gr. iij., Aq. pur. ℥viij. M. c. coch. j. o. h. ss. donec. alv. resp.

23*d.* In the morning no better; but after the medicine had operated freely, he was much relieved. In the evening there were symptoms of considerable irritability. ℞. P. Ipecac. comp., Prot. chlor. hydrarg. aa. gr. x. M. c. h. s.

24*th.* He rested well, but the medicine not acting upon the bowels, he experiences tenderness of gums. ℞. Ol. ricini, ℥iss.

25*th.* The oil did not act well. The pain however is removed, and he breathes freely. His only complaint is soreness of mouth.

26*th.* Mouth a little better: no pain. There still exists some irregularity in the bowels, for which he was ordered the Pulv. ipecac. comp. gr. x., which fully answered the indication. The galvanism has been discontinued since the 21st, but is now resumed.

30*th.* Mouth is now nearly well. His limbs are growing much stronger, and his improvement in every way is rapid, and especially so, as he declares, since his sore mouth began.

November 8*th.*—Since the last date he has been trusted alone to the inclined plane, and the tonic powers of a cold infusion of chamomile and quassia.

22*d.* In consequence of a sensation of rigidity in the gluteal muscles, he has been ordered the warm hip-bath. During the months of December and January he was permitted to walk the apartment as much as his strength would enable, and in every respect to deport himself at discretion.

February 1*st.*—It is not yet thought proper to discharge him from the hospital, lest the inclemency of the season should be too severe for his recently regained powers; hence he is tolerated as an invalid at large.

March 1*st.*—He continues an inmate of the hospital, but is so well as to require no further medical attention, and it is hoped that on the

return of the genial season he will be able to resume his usual avocation.

Case II. *General paralysis.*—The next case was that of Anthony Simmons, a black boy, about sixteen years old, an apprentice to a barber, who was admitted with general paralysis of several months duration. His master informs us that he had been originally a very healthy and athletic lad, and that he is ignorant of any cause to which his disease is attributable; that it came upon him very gradually; that it excited little attention until he became unable to walk, when he was placed under the direction of his family physician, who pursued various plans of treatment until he expressed the opinion that the case was incurable. Determining to give him every chance for recovery that medicine could afford, he removed him to one of our public infirmaries, where he remained until advised to remove him to the Alms-house, to be supported at public charge until death should invade every portion of his frame.

Notwithstanding his utter helplessness, his mind is apparently sound, and his disposition even cheerful. He retains the command over the muscles of the face and neck, and can occasionally produce some slight movements of a few of the muscles of the left arm. His sensibility is not impaired, but rather perhaps increased. His bowels are obstinately torpid. His circulation is very irregular, and the pulse intermits after every second or third beat. An epispastic was applied to the nape, and his bowels stimulated into activity by reiterated portions of Epsom salt, and other of more ordinary cathartics.

In a few days he exhibited evident symptoms of amendment. His pulse became more natural, and some mobility returned to his limbs. In this condition he continued stationary for a time, when finding that he could not be made to progress by any of the older remedies, and encouraged by the experience gained in the former case, we determined to have resort to the galvanic process. Accordingly, on the 11th of December, the apparatus was adjusted to his neck and one leg.

14*th.* After a lapse of only three days he is so much benefited that he is able to set erect in the bed, and when taken out, and placed upon his feet, can stand alone.

23*d.* He continues to increase in strength and mobility. There still existing a great tendency to constipation, occasional aperients are from time to time exhibited, but without interrupting the galvanic process.

28*th.* He is so far recovered that he is regaining confidence in his own powers, and has asked for crutches to aid him in hobbling about the room. Treatment continued.

January 1*st*, 1834.—Improvement gradually and rapidly advancing.

13*th*. So well that the treatment is discontinued.

February.—Has been reclaimed by his master, and has gone home.

Some days after his return to his master's shop, I called to see him. He approached me with a firm step, made his obeisance gracefully, grinned a pleasant display of the ivory palisadoes, and begged that "Tony should hab the honour of shaving Massy Docy."

We have a case of hemiplegia now under treatment, which promises a like successful termination.

These are all the cases of palsy in which this remedy has yet been tried by us. We are also experimenting with it in some other cases, whose results shall be communicated whatever they may be, and possibly we may then tax your patience with some speculative attempts at reducing our facts into the order of theory.

ART. III. *On the Pneumonia of Children.* By W. W. GERHARD, M.D. of Philadelphia. [Part 1st.]

WITH the progress of pathology the questions to be solved increase in number, and each solution of a problem discovers new groups of facts and opens new points of view, from which well-authenticated phenomena are to be examined. As each disease becomes a subject of investigation, and the diagnosis and natural history of it are thoroughly elucidated, it is necessary to examine the peculiar forms of the affection as modified by climate, age, sex, and above all, by therapeutic means.

Pneumonia is perhaps one of the diseases the best understood; we know with nearly absolute precision its pathognomonic characters, its ordinary duration, the portion of the lung most frequently invaded; and to a certain extent, the value of treatment in the cure, or alleviation of the affection is well established. What we least know is the modifications presented by pneumonia when the disease attacks individuals who have not yet attained the adult age, which is selected as most appropriate to furnish the types of disease. We now know, it is true, that pneumonia is not uncommon amongst children, that it is not unfrequently fatal; and still further, that few persons die below the age of puberty without presenting a partial induration of the lungs.

It remains to inquire whether the disease termed pneumonia in children, is identical with the same affection in adults, and what relation any modifications of it may bear to the different ages of childhood. In short, the pathology of the disease must be studied as thoroughly in the infant as it has been in the adult, and then the conclusions must be compared with those furnished by the latter class of patients. The following observations are designed to supply in a small degree the lacuna; they were collected during the years 1832 and 1833 at the Children's Hospital of Paris, and include a series of all the cases of pneumonia admitted during more than a year into one of the two divisions of the hospital destined to the treatment of acute affections.

The number of my own observations analyzed in the first series, is twenty-four. M. Rufz has allowed me to examine, under some points of view, sixteen cases which he had collected. Care was taken to avoid all unnecessary causes of error, by bestowing much time and attention on the examination of each case. The results obtained from the examination of these series of observations of children were entirely unexpected to myself, and therefore free from the bias of preconceived opinions.

Opinions not closely connected with facts, are least of all admissible in inquiries into the diseases of children, in which, although there are not often many complicated lesions, the diagnosis is extremely obscure from the small number of points upon which it must depend. Much more time must therefore be spent in ascertaining with accuracy the existence of the few symptoms which can be subjects of observation in children. Thus, in the class of diseases now examined, we have rarely the sputa, or the exact seat of pain, and are deprived of much of that collateral evidence which so much assists the diagnosis of the diseases of the adult. I was long since convinced of the necessity of fixing thoroughly the value of all the symptoms in diseases of children, however unimportant some of them seem when applied to the affections of adults where the great pathognomonic characters are easily recognised, hence an apparently undue weight was attached to noting the precise appearance of the countenance, of the external characters of the respiration, and other minor symptoms. No one symptom may be of itself pathognomonic, but the union of several fixes the identity of the affection, and if the disease be not sufficiently characterized, it is utterly impossible to reach any certain results as to its probable termination or curability.

I have divided all the cases which I could regard as observations of the pneumonia of children into two distinct classes. The first includes those cases of pneumonia which offered several of the charac-

teristic symptoms of the same affection in adults, such as pain, crepitous rhonchus, bronchial respiration, bronchophony, sometimes viscid sputa;—all this first series terminated in recovery with a single exception, and all were limited in their duration. The age of the subjects varied from six years up to puberty, none of the younger children presented a corresponding series of symptoms.*

The second series includes all the children who could be regarded as affected with pneumonia other than those above-mentioned; these were all young, not exceeding the age of six years, and presented a succession of symptoms very different from those observed in the pneumonia of adults. The induration of the lung was scarcely ever confined to a single one of these organs; it began by a number of detached nuclei, instead of commencing in a limited point of the pulmonary tissue; the duration of the disease was not limited, and in a large proportion of cases it terminated in death.

I have stated a few of the obvious points of difference between the two classes of observations, so that the general reasons for the classification might be seen. Upon entering into a more minute history of the two varieties, the distinction will become more obvious.

The number of cases of the first series was forty, and of these a single case terminated fatally; therefore the identity of the anatomical lesions with those of the pneumonia as observed in more advanced life, can only be shown in this single example. The very small mortality proves that this form of pneumonia which affects children after the second dentition, is not a very fatal disease; an inference which we may very safely draw even from a number of cases which are not sufficiently numerous to furnish an exact general ratio of the mortality. We know from correct observations on the pneumonia of adults, that it is rarely fatal until after the age of forty-five or fifty, and in the later stages of life its mortality is immensely increased. We may therefore state it as a law in pathology, that pneumonia, between the ages of six and fifty, is rarely fatal. These cyphers are based on the results of the Parisian hospitals.

* Of course the term pneumonia is here confined to those cases in which the affection of the lungs was the primary disease, and occurred in children who were in perfect health or at least free from any disease which could give rise to inflammation of the lungs as a mere secondary lesion. In other words the term pneumonia is given to those cases only in which the first appreciable local affection was the pulmonary inflammation. When pneumonia is a mere accidental or secondary lesion occurring during the course of a disease, such as small-pox or phthisis, the symptoms, termination and treatment are widely different from those of the primary affection.

Case.—Charles Roger, æt. 9½, admitted March 20th, 1833. On the morning of the 18th he was taken with fever, cough and pain in the side, the fever augmenting in the evening. Cephalalgia, but neither vomiting nor diarrhœa. Well-nourished, eats at the table of his master; does some light work in a paper manufactory. Health perfectly good before the 18th.

Present condition, March 20th, 6 *P. M.*—Hair dark-brown, eyes dark, skin brown, moderate embonpoint. Countenance anxious; strong dilatation and movement of the nostrils; lips swollen, dark-red; large circumscribed purple spots on each cheek; eyes brilliant, slightly injected; decubitus dorsal, inclined to the left; intelligence dull; stupor constant; frontal cephalalgia; no delirium; senses seem perfect; subsultus frequent in the tendons of both forearms; tongue yellow, thickly coated; no pain in the throat; appetite for apples and bread; thirst; abdomen hard, distended, and throughout tender on pressure; no typhoid spots; no nausea; one dejection; respiration high, irregular, forty-seven in the minute, heard at a distance; pulse 132, quick, irregular, not very strong; cough rare; pain in abdomen and lower part of right side of the chest increased by the cough; skin hot and dry.

21st, morning. Pulse 132, irregular; respiration 40; same countenance; left cheek less coloured than the right; stupor; respiration in the base of the right side, scarcely vesicular, without expiration, but obscure and not expansive, although not bronchial; no rhonchus; on left side respiration pure and expansive; percussion slightly obscure throughout the left side; eight leeches to right side of chest, followed by a cataplasm; gum linctus; mucilaginous enema; diet; pain diminished a little after the application of the leeches, without amelioration of the pulse or other symptoms; in the evening same symptoms.

On the 22d. Flatness on percussion in the whole posterior part of the right side of the thorax, and evident obscurity of sound in the anterior part; respiration scarcely heard on the right side, but not bronchial and pure; no change occurred in the physical signs until the 26th, when the respiration was blowing, (soufflante,) or imperfectly bronchial in the superior third of the posterior part of the right lung; bronchial with strongly marked expiration in the middle third, and abundant crepitant rhonchus at the base. On the 27th, fine crepitus in the whole posterior part of the right, except the subscapular fossa; the crepitus extends into the axilla, where it ceases abruptly; respiration pure in the left lung, except posteriorly a little below the middle, where a mixture of mucous sibilant and subcrepitant rhonchi are heard; mucous and sibilant rhonchi in whole anterior

part of right lung; slight obscurity on percussion, but no resonance of the voice throughout the right side of the chest.

27th. Crepitus larger, approaching mucous rhonchus on the right side; crepitus distinct in lower part of left side; no change in the physical signs occurred on the 28th.

30th. Abundant liquid mucous rhonchus in the whole extent of the right side; same rhonchus, but less abundant and less liquid in left side. Percussion not changed from last date. Decubitus variable, generally dorsal, apparently equally possible on either side. Cough frequent and loose during the whole disease. Sputa observed from the fourth to the eleventh day of the disease; viscid; in part rust-coloured, and afterwards of a dirty yellow colour, with streaks of pure blood. Pain in the side not complained of after the eighth day. Respiration always high and irregular, from 40 to 50 in the minute, excepting on the seventh, eighth, and ninth days, when it varied between 24 and 36. Pulse 132, not varying a single pulsation either on the morning or evening visit, until the seventh day, when it fell to 108, afterwards gradually rising to 120 on the eve of his death. On the last day too frequent and feeble to count. Heat constantly elevated and dry. Feebleness extreme through the whole duration. The stupor noted at first continued increasing until death. Cephalalgia not felt upon the increase of the stupor, (after 27th.) The sight was not evidently impaired, but eyes habitually closed, and painful if exposed to light. Hearing preserved. Intelligence obtuse; great irritability if disturbed, but answers correct until the day before his death. Slight delirium at times, not constant. No subsultus after the day of entrance. Sleep bad the last three or four nights only. Tongue whitish, afterwards yellowish, except at edges, which were dark red until the tenth day; afterwards dry, dark yellow at centre, and red at the edges and swollen. Teeth fuliginous after the tenth day, and gums where attached to the incisors of both jaws softened, and of brownish, gangrenous appearance the two last days. Breath fetid on the ninth day, becoming of a gangrenous odour towards the close. No vomiting until the fifth day, when he began taking a potion containing tartarized antimony. The some potion was continued until the eleventh day, without exciting either nausea or vomiting; on the last day frequent vomiting of a dark, slightly flocculent liquid. Stools rare until the first dose of tartar emetic, when there were two or three liquid dejections; afterwards the constipation returned. Abdomen not tender, rather developed until the two last days, when it seemed painful on pressure, and tense. The countenance retained the expression of heaviness, becoming haggard as

soon as the breath was fetid. Red, irregular, but circumscribed patches on each cheek throughout the disease. Lips thick, livid, red, dry.

Death took place at the end of the thirteenth day.

The treatment consisted in two applications of leeches to the chest, (eight and six,) on the fourth and fifth day. On the sixth day, a potion was given, containing six grains of tartarized antimony, which was continued with little variation until the eleventh day. The child tolerated the antimony extremely well; almost no nausea during the whole period; on the eleventh day the vomiting of dark liquid caused the suspension of the medicine. On the tenth day the quantity of tartar emetic had been increased to eight grains in the twenty-four hours, and two cups were applied to the right side of the chest. The other applications consisted of hot applications to the extremities, injections, and the pectoral linctus. It is needless to mention, that this depletory and contra-stimulant practice was without beneficial result; the tartar emetic was perfectly supported until the supervention of the dark-coloured vomiting.

Autopsy the 2d of April, 8½ *A. M. thirty-one hours after death.*—*Exterior.* Moderate embonpoint. Greenish colour of abdominal parietes. Livid spots on the posterior parts of the body.

Thorax. Right lung adhering in its inferior half by reddish, soft cellular adhesions, (recent.) Upper and middle lobes of a delicate, rosy-fawn colour externally; tissue rosy, soft, containing air, without trace of tubercles or emphysema. Inferior lobe on its anterior half of the same aspect as the upper lobes. Posterior half of this lobe in a breadth of one and a half to two inches at the middle; yellowish-red, spotted with black patches, one to four lines in diameter, apparently owing to effusion of blood into the pulmonary tissue; cut surface finely granulated, the granulations yellowish, easily crushed, not tuberculous, the largest of the size of a pin's head. Purulent liquid issues abundantly from orifices which are easily traced to the cut bronchial tubes, and the whole tissue is friable, and breaks into reddish-yellow, puriform pulp. Bronchia rosy, and not thickened in the upper lobe; reddish, thickened, and filled with puriform liquid in the lower. *Left lung* not adherent; upper lobe fawn colour, not tuberculous, rosy internally and permeable; lower lobe rosy and permeable to the air, except in its posterior and inferior fourth, where its cut surface, density and friability, are precisely similar to those of the indurated portion of the right lung. Bronchia rosy and transparent, except in the affected part, where their contents and aspect are analogous to those of the lower lobe of the right lung. *Bronchial*

glands grayish, firm, size of large peas, not tuberculous. *Pericardium* containing one ounce of limpid serosity. *Heart* one-half larger than the fist of the child. Total height two and a half inches. From interior of apex to free edge of aortic valves, three inches seven lines. Development of left ventricle at its middle, three inches nine lines; thickness of its wall at same place, without columnæ carneæ, six lines, with them nearly ten lines. Development of aorta at valves, twenty and a half lines. Thickness of right ventricle less than two lines, height two inches eight lines; pulmonary artery twenty-two lines. Tissue of heart deep red, firm; aortic valves contracted, rigid, their usual cartilaginous concretions of the size of a millet-seed. Slight cartilaginous induration of left auriculo-ventricular valves. Eustachian valve closed. Aorta of yellowish, onion-peel colour in its internal membrane only. Heart distended with dark blood, more abundant in the left cavities.

Stomach contracted, contains a thick, blackish matter, similar to that vomited the eve of his death. General hue of the mucous membrane rosy onion-peel colour, a little opaque, without any injections. Surface very irregular from a multitude of litttle depressions of same colour as the rest, rounded, the largest a line in diameter, edges not perpendicular; mucous membrane at bottom so thin as to render these spots translucent, but not entirely destroyed. Membrane adherent at these spots, with slight injection of the cellular coat in a few. General thickness of the mucous tunic augmented; strips brittle, but of the usual length, four or five lines in great cul-de-sac, six or eight in great curvature, and twelve to fifteen in the small. Much mammillation near the pylorus, and a little at the central parts. *Duodenum* grayish; follicles with central point numerous; contents yellowish. *Small intestine* contains a blackish matter nearly similar to that in the stomach. Mucous membrane throughout pale, a little opaque, but consistence nearly natural; strips six to seven lines in the jejunum and ileum, except in the last five or six feet, where they are only from three to five lines. Glands of Peyer white, less reticulated than usual. Isolated follicles visible in last three feet, less than millet-seeds; some with central point. *Mesenteric glands* small, grayish, firm, not tuberculous. *Large intestine* containing throughout the same blackish matter as the small intestine. Mucous membrane throughout pale, a little milky; isolated follicles just visible, in general with central point. Strips eight to twelve lines, firm. *Liver* flaccid, dull-gray colour; the two substances little distinct, greasing the scalpel a little. Bile green, rather abundant. *Spleen*

four inches long, reddish-brown, firm. *Kidneys* dark-coloured in the tubular portion, cortical substance violet-gray. *Bladder* a little injected at the fundus, firm, containing a little troubled urine.

Head. Pia mater a little injected; about half an ounce of serosity beneath the arachnoid, and a drachm in each lateral ventricle. Substance of brain firm, not injected. Spinal marrow firm and pale. *Mouth.* Gums softened in whole extent corresponding to the incisor teeth, of a dirty-gray colour and gangrenous odour.

I have given the details of the only mortal case amongst the subjects of the first series, to show the perfect identity both of symptoms and lesions, with those presented by fatal cases of the pneumonia of adults. The right lung, which was primitively affected, presented the granulated, indurated, but friable structure of an inflamed lung, between the second and third stages, that is, the degree intermediate between the red and gray hepatization. The pleura was inflamed on the side most affected. The extent of the lesion was not so great as in many cases which terminated happily, and perhaps this observation would not have had a fatal issue, were it not for the lesions of other organs. The stomach was evidently much altered. Had the tartar emetic any agency in the production of this lesion? at least the increased dose coïncided with the exacerbation of the symptoms. The gangrene of the mouth was a very unfavourable symptom; this affection supervenes in a large number of children labouring under various diseases, and usually it has a mortal termination. The child's health previously to the commencement of the pneumonia was good, excepting an affection of the heart, which was shown only on dissection.

I have arranged the cases whose issue was fortunate in a tabular form, which will include some of the leading symptoms in each case, especially such as were necessary to characterize the disease so clearly as to render the diagnosis perfectly free from doubt. Some such arrangement is adviseable to remove all suspicion of involuntary errors to which an author might be exposed, and these details render all wilful deception morally impossible, from the much greater skill and labour necessary to invent and adapt together so great a number of imaginary details, than would have been requisite to examine and record facts. The table might have included all the data sought for, were it not for the obvious typographical inconveniences, which oblige me to give the simple analysis of many symptoms.

Name. Age. Sex.	Duration.	Month.	Expectoration.	Physical Signs.	Pulse.	Respiration.	Treatment.
1. *Pageault*, æt. 7. Male.	14 days. Entered 7th day.	September.	None.	Bronchial respiration; bronchophony; flatness on percussion in whole of right side; posteriorly crepitus from eighth to twelfth day.	140 at entrance, falling to 84; regular, quick.	50 to 60 per minute, at convalescence 30 to 36.	Venesection, 8 ounces on 9th day; 6 leeches on 10th; sinapisms; gum linctus, &c. No treatment before entrance.
2. *Ferrari*, æt. 11. Male.	12 days. Entered 8th.	January.	None.	Rude respiration or imperfect bronchial on right side, with crepitus two last days.	132 at entrance, afterwards 80 to 88.	36 at first, afterwards 22 to 28.	Diet and mucilaginous drinks.
3. *Chotard*, æt. 7. Male.	Entered 5th day. Left hospital on 8th. Convalescent.	March.	None.	Strong bronchial respiration in inferior two-thirds of left side. Crepitus and sub-crepitant rhonchus on eighth day.	96, full, afterwards 72.	30; on last day 24.	Not noted.
4. *Mallard*, æt. 9. Male.	13 days. Entered 3d day.	September.	None.	Bronchial respiration in whole posterior part of left lung. Crepitus at intervals in middle of lung.	120 at entrance, falling to 70; quick and small.	40 to 50; diminishing to 30.	Venesection, 6 ounces on 4th day; gum linctus and emollients; diet.
5. *Prudhomme*, æt. 9. Male.	Developed in hospital. Removed.	December.	None.	Bronchial respiration on right side superiorly, and throughout left, with some crepitus.	124, quick.	50 to 60.	Six leeches to chest, and two applications of scarified cups.
6. *Bay*, æt. 7. Male.	15 days. Entered 7th day.	December.	None.	Bronchial respiration, and afterwards crepitus in left side of chest.	120, reduced to 56.	40 at entrance, afterwards 22.	Not noted.
7. *Landry*, æt. 10. Female.	11 days. Entered 5th.	September.	Whitish; rare.	Bronchial respiration in lower part of right lung. Flat sound on percussion. Crepitus afterwards.	124, in last days 70.	52, diminishing to 20.	One application of 20 leeches; demulcents and diet.
8. *Marquetti*, æt. 16. Male.	24 days. Entered 3d.	January.	Viscous, afterward rust-coloured.	Bronchial respiration in whole posterior part of right lung, and lower lobe of left. Bronchophony, flat sound, and crepitus.	100 to 114, in latter stages slow, 70 per minute.	43, in convalescence 20.	Venesection, 8 ounces; four applications of cups, and a blister; 6 to 8 grains of tartar emetic daily.
9. *Diancourt*, æt. 6. Female.	20 days. Entered 10th.	April.	None.	Bronchial respiration in middle and upper back part of both lungs; flatness and crepitus.	156, quick, falling to 76.	52, in convalescence 24.	Venesection, 6 ounces; sinapism to chest; demulcents and diet.
10. *Geberty*, æt. 10. Male.	8 days. Entered 2d day.	October.	None.	Bronchial respiration and bronchophony in upper posterior two-thirds of right lung; crepitus in lower third. Slight crepitus and rude respiration in middle third of left.	96, after third day 70 to 80.	40 at first; 30 to 20 afterwards.	Venesection, 6 ounces on 3d day; 3 cups on 4th, 2 on 5th; gum linctus; demulcents.
11. *Dury*, æt. 6. Male.	11 days. Entered 4th day.	January.	None.	Strong bronchial respiration in lower part of right lung; bronchophony, flatness of sound, and crepitant rhonchus.	124 at entrance, afterwards about 90.	52, afterward gradual decrease to 24.	Two cups to right side; demulcents and diet.

Name. Age. Sex.	Duration.	Month.	Expectoration.	Physical Signs.	Pulse.	Respiration.	Treatment.
12. *Sauy*, æt. 9. Male.	18 days. Entered 3d day.	December.	None.	Bronchial respiration and bronchophony in upper posterior part of left lung; crepitus in lower lobe. Slight sub-crepitus in lower lobe of right.	132 to 68, at last irregular.	56, at convalescence 16.	Two cups to left side, dry cups, idem; opiates and demulcents.
13. *Chaudain*,* æt. 6. Male.	13 days. Entered 4th day.	March.	None.	Bronchial respiration in lower two-thirds of left side, and rude in upper third; crepitus. Some crepitus in right lung.	132, at discharge 100.	47, afterwards to 24.	Eight leeches to base of left axilla; dry cups; blister; opiates and demulcents.
14. *Legay*, æt. 11. Male.	17 days. Entered 7th day.	March.	Rare, yellowish, and viscous.	Flatness on percussion in whole posterior part of the right side. Bronchial respiration and bronchophony. Crepitus.	135 to 80.	44 to 22 at convalescence.	Venesection, 8 ounces; demulcents; diet.
15. *Vidal*, æt. 15. Male.	15 days. Entered 3d.	January.	Whitish, viscous, afterwards brownish.	Flatness on percussion on right side, especially in the inferior posterior part of the lung.	128 to 90.	37, then up to 56, falling to 25.	Venesection, 8 ounces; dry cups; tartarized antimony, 6 to 8 grains in the 24 hours. Diet.
16. *Chalumeau*, æt. 13. Male.	14 days. Entered 4th.	February.	Transparent, mucous—not viscous.	Flatness on left side. Bronchial respiration in middle parts of both sides, especially the left. Crepitus.	128, quick; at termination, 72.	35 to 24, high.	Twelve leeches to chest; 2 cups to left side; slight opiates; demulcents.
17. *Briant*, æt. 10. Male.	16 days. Entered 5th day.	March.	Whitish, mucous.	Flat sound in whole posterior part of the right side. Bronchophony, bronchial respiration and crepitus in same part.	120, quick, afterwards 84.	52, irregular at first; down to 24.	Tartarized antimony, 6 grs. in the 24 hours for six days; demulcents, cataplasms afterwards.
18. *Aubert*, æt. 7. Female.	11 days. Entered 4th day.	April.	Rare, whitish.	Flat sound in whole of right side. Bronchial respiration; fine crepitus. Bronchophony in lower two-thirds of the right lung posteriorly.	130 to 100 in convalescence. Fever from erysipelas.	72, high and irregular; at convalescence still 30 to 40.	Cataplasms to chest; demulcents; sinapisms to legs, and blister to side affected.
19. *Vuli*, æt. 12. Male.	11 days. Entered 6th day.	December.		Bronchial respiration and crepitus in the upper part of the right side.			Venesection, 12 ounces at entrance; demulcents afterwards.
20. *Bourdot*, æt. 14. Female.	Entered 5th day.	January.	None.	Bronchial respiration and bronchophony in the upper two-thirds of the posterior part of the left side. Crepitus inferiorly.	140 at entrance.	45 and irregular at entrance.	Venesection, 8 ounces on 6th day; repeated on 7th; tartarized antimony.
21. *Condenime*, æt. 13. Female.		February.	None.	Bronchial respiration. Flat sound. Large crepitus in lower two-thirds of the left side.	120, afterwards 84.	40, irregular to 30, regular.	

* This child had for a long time a chronic enlargement of the glands of the neck, and tubercles probably existed in the lungs; certainly in the bronchial glands.

To this table are to be added three other observations which I collected at the Children's Hospital: from accidental causes, parts of these observations were mislaid; the portions which remain are sufficient to characterize the disease, which was cured in both the remaining cases.

NAME.	MONTH.	PHYSICAL SIGNS.
No. 22. Boy, æt. 8.	March.	Flat sound, bronchial respiration and crepitus in the left side inferiorly.
No. 23. Boy, æt. 15.	November.	Bronchial respiration, bronchophony and crepitus, with flat sound in lower two-thirds of the right side.

The preceding cases are all those of which I have myself preserved notes, but one of the whole number, (twenty-four,) was fatal. A few others, the notes of which were either not collected or lost, would have a little increased the number of observations of cure.

The following table is drawn up from the cases collected by my friend M. Rufz during the same time that I was myself engaged in observing the patients at the Children's Hospital; M. Rufz was occupied in another ward of the same institution. The test of pneumonia in all these cases was the existence of bronchial respiration, crepitus, bronchophony, and a flat sound on percussion occurring in subjects healthy or nearly so; the symptoms in all came on suddenly, and could not therefore be confounded with a tuberculous affection of the lungs, and much less with pleuritic effusions.

Sex and Age.	*Duration.*	*Month.*	*Side Affected.*	*Treatment.*
No. 1. Girl, æt. 6.		October.	Right.	White oxide of antimony.
No. 2. Girl, æt. 12.	45 days.	March.	Right.	White oxide of antimony.
No. 3. Girl, æt. 8.	13 days.	September.	Right.	Venesection; repeated. Leeches.
No. 4. Girl, æt. 9.	14 days.	June.	Right.	Venesection. Demulcents.
No. 5. Boy, æt. 10.		May.	Right; upper lobe.	White oxide of antimony.
No. 6. Boy, æt. 14.	12 days.	April.	Right.	Venesection twice.
No. 7. Boy, æt. 6.	12 days.	April.	Left.	Venesection twice.

(Table continued.)

Sex and Age.	*Duration.*	*Month.*	*Side Affected*	*Treatment.*
No. 8. Boy, æt. 14.	11 days.	April.	Right.	Venesection.
No. 9. Boy, æt. 12.	12 days.	April.	Right.	Venesection twice.
No. 10. Boy, æt. 7.		April.	Right.	
No. 11. Boy, æt. 12.	9 days.	October.	Left.	No venesection nor antimony.
No. 12. Boy, æt. 14.	12 days.	August.	Left.	Venesection.
No. 13. Boy, æt. 13.	11 days.	May.	Right.	Venesection repeated several times.
No. 14. Boy, æt. 15.	23 days.	May.	Left.	Venesection; repeated.
No. 15. Boy, æt. 11.	13 days.	May.	Right.	Venesection.
No. 16. Boy, æt. 12.	14 days.	April.	Right.	

The treatment is not given in detail, it was our intention at the time the table was made out, merely to examine the duration of the disease as treated with or without bleeding and the antimonials. The list includes all the cases observed by M. Rufz, who did not witness a single fatal case. The patients enumerated in the table made out from M. Rufz's observations, were treated by MM. Guersent and Baudelocque, the cases collected by myself were from the wards of MM. Jadelot and Bonneau. The whole number amounts to thirty-nine successful, and one fatal case. In other words, in the whole Children's Hospital during the year 1833, and a part of 1832, forty cases of pneumonia occurring in children from the age of six upwards were observed, and of this number but one was mortal. The patients were not selected, but were treated by all the different physicians of the hospital, and were observed at all seasons of the year, so that the ratio of one mortal case in forty is based upon the greatest possible variety of patients, seasons and methods of treatment; and the proportion must represent the general law as exactly as it can be deduced from a moderate number of cases. In private practice the mortality should be even less considerable, because the patients sent to an hos-

pital, and especially to the children's, were such as presented disease of a severe form, that is, they were generally selected from amongst the whole mass of the poorer children affected with any one disease. It must also be recollected that neither simple bronchitis nor pleurisy are included in the tables which are confined to the cases presenting undoubted evidence of the existence of inflammation of the pulmonary parenchyma; that is of a more severe disease than some of the affections which are occasionally confounded with pneumonia. The necessary conclusion from these facts is, that pneumonia in children above the age of six years, either healthy or but little diseased, is rarely fatal. Of course this proposition is based upon the cases treated at the Children's Hospital, it remains for us to examine the apparent modifications produced by the different therapeutic means that were employed.

The sex of the children was noted in each case, but it was only during the last nine months of 1833, that the cases were collected simultaneously in the two divisions of the hospital; the relative numbers for this time are twelve boys and four girls, or three to one. In adults the number of men affected with pneumonia is greater than that of women, but the difference is less considerable than in children.

The seasons of the year are noted in the tables. The forty cases occurred in the following months. January, five; February, two; March, seven, including the fatal case; April, eight; May, four; June, one; August, one; September, four; October, three; November, one; December, four. In the three spring months nineteen cases were collected; in the winter months eleven; in autumn eight; and in the summer but two. The particular months most favourable to the production of pneumonia were April and May; those least favourable were July, in which no case occurred, June and August, in each of which there was but one example. This result is similar to that obtained amongst adults.

Age.—The youngest in the tables were six years of age; a single patient had reached the age of sixteen. The mean age for the twenty-four cases which I collected was a fraction less than ten years, the average of the sixteen cases of M. Rufz a fraction less than eleven. The whole number gave an average of ten years and a third; had the fractions of years been estimated in the calculations of the ages, the mean number would have been about eleven; a result showing that pneumonia becomes more frequent as we approach the age of puberty.

Duration.—I had sufficient data to establish the beginning and the termination of seventeen of the cases of recovery. The com-

mencement of the disease was not dated from the first precursory symptoms, such as restlessness, cephalalgia, or other uneasy sensations, but from the pain in the side, chill, or severe cough, which in every case came on suddenly, so as to render the proper commencement of the affection very distinct from the *prodromes.* The termination was fixed at the complete disappearance of the physical signs, that is, after the cessation of the secondary crepitant rhonchus, which succeeded to the bronchial respiration and bronchophony. The cessation of physical signs of the disease affords the most simple and easy means of marking out a limit for the disease; the general symptoms did usually not continue as long as the physical signs. The mean duration of the seventeen cases collected by myself, in which the commencement and termination of the symptoms were ascertained, was nearly fourteen days and a third. Of thirteen cases from the series of M. Rufz, the mean duration was a little more than twelve days and a sixth. This difference did not depend on the greater age of most of the patients observed by M. Rufz, for the duration of the pneumonia in the eight children below the age of ten years, whose cases are included in the seventeen observations of the first table, was fourteen days and three-eighths, or but a little longer than the mean duration of the whole seventeen cases. It is then obvious, that a cause of the difference must exist, other than the mere inequality of the ages. This cause can scarcely be found in the seasons of the year, for the cases collected in both tables were not confined to any particular season. There remain but two ways of accounting for the difference in the results, the one is by supposing that the convalescence in the two series was not dated at the same period of the affection; the other is by referring the inequality of time to some difference in the treatment. In my own observations the date of convalescence is fixed at the disappearance of the sub-crepitant rhonchus, which usually succeeds the bronchial respiration of pneumonia; in those of M. Rufz the tables were drawn up by us at Paris, and the same cessation of the sub-crepitus was regarded as the conclusion of the disease; still from a less rigorous exclusion of the doubtful signs of disease, the termination was probably placed a little earlier than in the cases which I had collected myself, and which I examined more at leisure. The difference from this cause is, however, extremely small, not exceeding a day at most, and probably the average would be only a fraction of a day. The remaining cause of the difference in duration must be sought for in the various treatment pursued; the influence of the therapeutic agents will be examined in one of the following pages.

The lung primarily or exclusively affected with the inflammation, was the right in twenty-six cases, and the left in twelve. In two subjects, both lungs were nearly equally affected. The greater frequency of inflammation of the right than of the left lung seems, therefore, still more considerable in children than adults.

The *sputa* of children are so rare, that this sign is of little or no value in the exploration of their diseases; the few cases in which expectoration occurred are noted in the table.

The *physical signs* of course existed in every case of pneumonia which I have analysed, or rather I regarded no subjects as certainly affected with pulmonary inflammation, unless they presented the physical signs—crepitus, bronchophony, bronchial respiration, and flat sound on percussion. Fine crepitant rhonchus existed in no case without the bronchial respiration, and I met with no other case at the Children's Hospital, amongst the older children, in which the general symptoms of pneumonia and the crepitant rhonchus existed together, without bronchial respiration. This coïncides with what is observed in adults; M. Louis stated to me, that he had not, upon examining the observations collected by him during his clinical courses at La Pitié, found any case of pneumonia without bronchial respiration. It would appear, therefore, that the bronchial respiration in pneumonia is at least as constant as the crepitant rhonchus. It is scarcely necessary to mention, that bronchial respiration, bronchophony, and diminished sonorousness of the chest must always coëxist; in the cases in which each of these signs is not enumerated, some accident had caused the omission. The identity between the physical signs of pneumonia is perfect, except that the crepitus is generally larger in children, and if for a short time not heard, it may be generally reproduced by making the child cough, when the crepitus is again heard in the strong inspiration that succeeds the cough, giving rise to a sound like the crackling of a quick-match.

The *pulse* was always frequent during the early periods of the disease, and became slower as convalescence approached. The relative frequency of the pulsations is indicated in the table.

The *respiration* affords a better test of the degree of the pulmonary affection, than the pulse. It is besides much more easy to count the number of inspirations and examine the movements of the respiratory muscles, than it is to ascertain the frequency of the arterial pulsations, especially if the child be at all restless and irritable. The table will show, that the number of inspirations in the minute was in one case 72, in others it varied from 30 to 50, but always decreasing during convalescence to the normal standard, which in chil-

dren of this age during convalescence, or in health, is from 20 to 24. Besides the increased number of inspirations, the respiration presents other alterations in pneumonia, it is high and abrupt; this abruptness is particularly shown during the inspiration which comes on suddenly, before the expiration is as prolonged as it is in health.

The last column in the tables contains a summary of the treatment. The particular remedies are not mentioned, but each venesection or application, either of leeches or cups is noticed; the other remedies of apparent activity are also noticed. I shall attempt the analysis of the cases, with reference to the mode of treatment pursued in each, compared with the duration of the disease. Sixteen cases in the first table include a note of the treatment, and a statement of the duration of the disease. In one-half of this number of patients blood was taken from the arm; the other eight, with three exceptions, were cupped or leeched upon the side affected. The duration of pneumonia in the eight patients who were bled from the arm, was fifteen days and a half, that in the other eight, was thirteen days and one-eighth; the latter number approaches the cypher of duration deduced from the second table. But nearly all the patients whose cases were collected by M. Rufz were bled, and generally much more copiously than the patients whom I had myself observed; and the shorter duration of the disease in a part of the cases of the first table could not have been owing to the omission of venesection. The mode in which venesection was practised, was not however the same in both cases. M. Guersent, in whose wards most of M. Rufz's cases were collected, is in the habit of ordering more copious and more frequently repeated bleedings than either M. Jadelot or M. Bouneau, whose patients I had observed; however questionable the propriety of free blood-letting may be in most of the diseases of children, in the form of pneumonia which I am at present examining, the larger abstractions of blood seem to have had a happy influence. In the cases of the first table the bleeding was confined to the more severe forms, and was not frequently repeated; but in the second series of cases, venesection was resorted to in most instances, whether the disease was severe or mild, and when requisite the bleeding was repeated more than once. The immediate effects of the venesection in each case were to relieve to a certain extent the more troublesome symptoms, such as the cephalalgia, restlessness, and dyspnœa; in no case did it seem to produce an immediately injurious effect. The conclusion would then be, that although pneumonia, whether treated actively, or merely by topical blood-letting and demulcents, is rarely fatal in children above the age of six years; still, more copious vene-

section shortens, to a certain extent, the duration of the disease, and relieves the most harassing symptoms. This conclusion is nearly analogous to that which M. Louis has deduced from the analysis of his cases of pneumonia in adults. No exact tables have yet been given of the comparative mortality of pneumonia treated with or without bleeding. It is true, a physician, in cases of severity is not justified in omitting venesection; but cases occur not unfrequently in which patients have either not been seen by a physician, except towards the termination of the disease, or in which some peculiar circumstances have prevented their medical attendant from resorting to the use of the lancet. Whether the mortality be much diminished or not by blood-letting in pneumonia, it is not the less important to resort to it as a means of shortening the affection, and of diminishing the severity of the most painful symptoms.

In several cases the preparations of antimony, given according to the Italian method in large doses, were tried. The disease was not obviously shortened, and the only case which terminated fatally was treated by this method. I am very far from asserting that the tartar emetic, or the white oxide of antimony, may not be useful in children above the age of six years, who may be affected with pneumonia; but the advantage that may result from this treatment was not evident in the small number of cases in which I saw it tried. The physician who had prescribed the antimony in several cases, among which was the only fatal one, thought that the value of the remedy was shown by the successful results. This incident affords us another proof of the extreme difficulty of ascertaining the exact value of therapeutics, however clear this part of medical science may seem to many physicians.

The other remedies employed at the Children's Hospital in the treatment of this form of pneumonia, were blisters, sinapisms, with the internal administration of potions made of gum Arabic sweetened, and sometimes rendered tranquillizing by the addition of small doses of opiates. These remedies are, of course, merely designed as palliatives, and their utility is shown by the immediate relief of some of the harassing symptoms.

The preceding analysis of the cases of pneumonia occurring in children after the second dentition, includes all the details which were enumerated in the tables; these details embrace the more important points. Other symptoms are less easily analyzed, from the difficulty of eliciting the same minute details from children that are easily to be obtained from adults. The frequency of a chill at the beginning of the disease could not be ascertained, although the chil-

dren who recollected the existence of the chill could give as accurate details of its phenomena, such as shivering, and a desire to approach the fire; the absence of this symptom could not be satisfactorily established by the want of recollection, or the inattention of other patients. A chill certainly took place in the greater part of the patients, and probably in all. Pain in the side affected, occurred in every case; this pain was acute, augmented by the cough, and was generally felt at the lower part of the axilla, most frequently at the anterior than posterior margin.

The temperature of the surface was elevated in every case; in the severe examples the skin was dry and rugous, and in one case complicated with diarrhœa, the skin remained harsh and dry for some weeks after the cessation of the symptoms of pneumonia. Anorexia was constant during the early periods of the disease; the appetite was destroyed much more completely than in most other diseases of children; the dyspnœa and great anxiety destroying completely all desire of food. Constipation to a greater or less degree existed in about three-fourths of the cases; in one there was diarrhœa of some intensity.

Vomiting occurred in seven of the twelve cases in which the presence or absence of this symptom was ascertained; as in other diseases, children attacked with pneumonia are, in the majority of cases, taken with vomiting as one of the first symptoms.

The cerebral functions were altered to a certain extent in all the more severe cases; the intelligence was dull, the patient lying in a state of stupor, which nearly approached coma, even in one or two of the cases which terminated happily. It was nearly impossible to determine precisely when delirium occurred, on account of the absence of that minute observation, which is necessary to discover the aberrations of the intelligence in children. Delirium was evidently present in several cases; in others it was doubtful whether it existed.

To conclude this account of pneumonia in the older children, I shall give one of the observations analysed in the table. The observation is selected on account of the short duration of the severe symptoms.

Case.—Landry, (Angelique,) a girl, æt. 10 years. Entered September 5th, 1833. Taken ill on the 1st with head-ache and fever, but neither chill nor epistaxis; anorexia; constipation; heat of skin; cough two days after commencement, but without pain in the side; thirst great.

Actual state, September 5th.—Moderate embonpoint; skin sallow; decubitus dorsal, but possible on either side; cheeks red, in patches; nostrils dilating at each inspiration; lips dark red, dry; intelligence

very good; no cephalalgia; senses perfect; sleep good; tongue thick, moist, clean, rather dark red; thirst great; anorexia; no dejections; abdomen not distended, not tender; urine not painful; cough moderately painful, dry; sputa whitish, very rare; pulse quick, regular, 124; respiration high, 52 inspirations per minute. *Thorax.* Resonance on percussion good in both sides of the chest anteriorly, rather less on the right than the left side; respiration on the left side, expansive, pure and without expiration; on the right less expansive with bronchial expiration at the lower part of the chest; posteriorly percussion flat in the lower part of the right side only; respiration in the left side, expansive and pure, without expiration in the right; blowing or rude with marked expiration superiorly; in the lower part of the lung respiration nearly bronchial; crepitus heard only after coughing in the lower part of the lung; resonance of the voice distinct at the lower part of the right lung; twenty leeches, one-half to the chest, the other to the epigastrium; demulcent drinks and diet.

On the 6th abdominal symptoms unchanged; sleep bad, but intelligence good; pulse 108, regular, feeble; respiration 35, less elevated; bronchial respiration in whole right side posteriorly, especially in the upper half; vibrating bronchophony at the middle third of the right lung, nearly similar to egophony. Gum linctus; gum water; cataplasms to chest; milk.

7th. Pulse 84, natural, but rather feeble; respiration 28, not elevated; appetite; no thirst; heat of skin scarcely more than natural. Crepitant rhonchus more abundant after coughing in the whole posterior part of the right side; rude respiration still distinct in the upper half.

On the 8th respiration 20; pulse 76, of natural volume. Respiration in the upper part of the right side less bronchial; crepitus still continues. Gum water; broth.

On the 12th a little crepitus was still heard about the middle of the right lung, after coughing. After the 12th respiration natural, except slight feebleness on the right side. Pulse increased in frequency to 108 on the 11th, afterwards falling during convalescence, which was protracted until the 18th, when the girl was discharged well.

This observation is the least severe example of this variety of pneumonia that I have witnessed. The effects of the application of the twenty leeches, (equal to about fifty American,) were almost immediate; the frequency of both pulse and respiration decreasing, but the local symptoms did not abate until two days later.

In the next number of this Journal I shall examine the pneumonia of children below the age of six years; this second variety differs in many respects from the affection which has just been described.

Art. IV. *Observations on Elephantiasis.* By C. W. Pennock, M. D. of Philadelphia.

AMONG the numerous institutions of Paris which are devoted to medicine, no one surpasses in importance and interest the Hôpital St. Louis. This noble establishment is situated on a high eminence near the north-eastern part of the city, and was originally founded by Henry the Fourth in the year 1607 as a receptacle for the leprous. For a long period this antique structure received scarcely any attention from the foreign medical visitor. Situated far from the centre of the city, not attached to the medical school, and not presenting men of genius or industry among its clinical professors, it was considered merely as a receptacle for incurable diseases, and the student found nothing to repay him for his visit to a scene of misery and distress. It was reserved for Professor Alibert to change this feeling, and to place the Hôpital St. Louis among the most celebrated of Europe. This eminent professor first directed the attention of pathologists to this institution by his work on the diseases of the skin. Since that time its importance has been properly appreciated.

The eminent names of Biett, Alibert, Lugol and Richerand occur, in the list of its clinical professors, and crowds of students from the different quarters of the globe avail themselves of its medical advantages. The hospital contains upwards of a thousand beds, and though from its original destination it receives many chronic cases, yet from its locality, its doors are necessarily open to different acute and surgical diseases.

The division under the charge of MM. Biett and Alibert comprises two hundred and twenty beds. During a visit to Paris in 1832–3, through the kindness of these gentlemen I obtained free access to their wards. It was however principally in the service of M. Biett, who had under his direction one hundred and sixty patients distributed in four wards, remarkable for their beauty and convenience, that I made most of my observations on cutaneous diseases. M. Biett facilitated any inquiries by every means in his power, and it is to him and to M. Martins, the aide naturaliste of the school of medicine and the interne at St. Louis, that I owe the greater part of the notes I have made. The observations are about a hundred in number, and I propose selecting from them such as may exemplify the practice of that eminent pathologist. Before presenting any of these cases, I would observe, that I have considered the classification of Bateman and Willan as adopted by M.

Biett, as preferable to that of M. Alibert. The first cases which are presented are those of elephantiasis which were in St. Louis in 1832. The pathological history of this affection is exceedingly imperfect; much is yet to be desired, and the investigation of the disease offers a wide field for observation. The object of the writer is to present the subject to those whose opportunities may be favourable to its elucidation.

Elephantiasis of the Arabs complicated with frambœsia.—Barbier, aged twenty, by profession a joiner, entered the Hôpital St. Louis, service of M. Biett in the autumn of 1833. In the month of December, I collected the following facts respecting his case.

He was born in the Department of Haute-Saone; has never been in tropical climates, but has always lived in France, and his parents were free of all cutaneous disease. His nourishment has always been good. During the first years of childhood until he was nine years of age, he enjoyed good health; from that period until the age of seventeen he was affected with a succession of abscesses in the groins, on the neck, arms, and at the sternal extremity of the left clavicle. From the appearances of the cicatrices, there is no doubt, but, that these abscesses were scrofulous. They are of a brown colour, almost livid, intermixed with white, of an irregular form, and an uneven surface.

The present affection commenced two years ago, immediately above the great toe of the right foot, by a slight elevation and discoloration of the skin, attended with local pain and some fever; these symptoms were followed by a small, soft, projecting tumour of a red colour which bled upon the slightest touch.

Six months afterwards the patient contracted a blenorrhagia, which ceased in a month under the treatment of injections of infusion of marsh-mallow, drinking the decoction of sarsaparilla and the liquor of Van Swieten. No secondary symptoms followed, but the cutaneous affection was subsequently augmented; since that time he has not had any venereal symptoms. The disease extended itself by the successive formation of the spongy tissue from the toes to the superior part of the thigh. It presents, according to its degree, four principal forms.

First. A small, indolent, subcutaneous tubercle of the size of a pea, causing a slight elevation of the skin. This is the commencement.

Second. Convex elevations exactly circular rising from one to four lines above the skin, surrounded by a brown circle varying in diameter from a quarter of an inch to one and a half inches, of a red colour, soft, spongy, analogous to the fungus of wounds, and bearing some

resemblance to raspberries lying side by side, and exuding a red serosity.

Third. Masses formed by the union of the above, but of irregular forms, of variable size, covering the leg and the inferior part of the thigh. The greater part of these tubercles have the same appearance as those which are isolated. Where the healing process has commenced the surface is drier, less elevated, and not so irregular. At the superior and inferior part of the leg the vegetations have the forms of small fleshy tongues, imbricated, resembling the crest of the cock.

Fourth. Cicatrices, which are sometimes large, smooth, of a white colour, slightly elevated above the healthy skin; sometimes the fungosities seem to have dried up without changing form, and have assumed a brown, livid appearance.

The union of all these alterations have changed the form of the limb, and gives it the appearance of the elephantiasis of the Arabs. The circumference of the superior two-thirds of the diseased leg is one inch more than that of the corresponding part of the other: the inferior third is one inch and three-quarters more than the left. The limb is the seat of excessive itching, and when cauterization is attempted by the per-nitrate of mercury the patient suffers excruciating pain. With the exception of the cutaneous affection his general health appeared good during the winter of 1833–4. Treatment—Infusion of hops for habitual drink, with ʒij. Sub-carb. soda, per Oj.; alkaline baths daily, and cauterization with per-nitrate of mercury, (nitrique acide de mercure.)

April and May.—After the first of April, excessive diarrhœa commenced, attended with extreme prostration of strength; the tongue was red, dry; thirst extreme; abdomen slightly painful upon pressure; the pulse frequent, (88,) and feeble; his usual cheerfulness forsook him, his mind became depressed, and he complained bitterly of his situation. The diarrhœa was arrested at intervals by regulating his diet, and by opiates and astringents, but was renewed by the imprudent excess of the patient. During this time the vegetations, (fungosities,) and the tissue of the cicatrices ulcerated, and the diseased limb was covered with extremely painful ulcers, very irregular in their forms, their edges perpendicular, and internally of a grayish colour. The slightest pressure upon them produced an exudation of very fœtid pus. With these symptoms the patient died on the second of June.

Autopsy, thirty hours after death.—The skin on every part of the diseased limb was thickened, and with the cellular tissue beneath was

from one-fourth of an inch to an inch and a half thick. On the cicatrized points the epidermis was smooth, and beneath this the entire thickness of the cellular and adipose substance, with the exception of a few isolated masses of adeps, was replaced by a white, fibrous, aponeurotic tissue, which was firmly attached to and blended with the dermis. In the points in which cicatrization had not commenced, the epidermis appeared detached from the dermoid mucous tissue, which was red, thickened, slightly uneven, (mamelonné,) bearing some resemblance to the intestinal mucous membrane, and could be raised without dissection from the subjacent adipose layer. In the middle of the thigh between the sartorius and rectus femoris muscles, was an abscess of the size of a goose-egg, containing a white, tenacious pus; and on a level with the internal malleolus, all the cellular tissue for the space of two inches was changed into a sanious mass of a slate-gray colour, and of a fœtid odour. At the external healthy parts of the leg, the adipose substance was two lines in thickness, soft, and of a clear light-yellow colour; in the diseased parts, on the contrary, it was an inch thick, and separated into masses by a white tissue. This tissue was firm, resistant, and was penetrated with difficulty by the scalpel; the cells formed by the interlacing of its fibres contained beside the adeps, a great quantity of serous and gelatinous fluid. In the parts which were highly diseased, the skin was entirely destroyed, and the ulceration extended to the adipose layer; on the internal and superior part of the leg and beneath the aponeurotic fascia was an abscess of the size of a hen's egg, containing greenish pus, and partly lined with a false membrane. The tunics of the internal saphena vein were thickened, and when cut across, the cut extremity remained open like an artery. The tendons, bones and periosteum were healthy.

Thorax.—A small group of tubercles were found at the summit of the right lung. Near these was a cavity traversed by fibrous bands, and was evidently a cicatrized tuberculous cavern. The rest of the lungs crepitant, and floated when thrown on water.

Heart.—The heart was soft, and the parietes of the ventricles thin.

Abdomen.—The liver was much enlarged, it not only occupied the epigastric region, but extended into the left hypochondriac; the volume of the left lobe was almost equal to that of the right, its entire weight eight pounds. Externally and internally it was yellower than usual. The gall-bladder contained a greenish bile; its ducts were unobstructed. The mucous membrane of the stomach, and the intestines in their entire extent had its normal colour and consistence.

There was neither redness nor softening, nor induration of this tissue.

Remarks.—The hypertrophy of the adipose substance, the hardness of the cellular tissue, and the effusion of serosity and gelatinous fluid, leave no doubt of this disease being an elephantiasis of the Arabs. These characteristics, and more especially that of the presence of the serous secretions, has induced M. Bouillaud to consider this disease as bearing a strong pathological resemblance to the œdema of phlegmasia dolens of women. It is much to be regretted, that the details of the case have not been collected with more precision; some interesting facts are however deducible from it. The disease occurred in a tuberculous subject; it supervened upon the healing of scrofulous abscesses, and the appearance of frambœsia occurred before the patient had contracted any venereal disease. M. Alard, to whom the medical profession is greatly indebted for the lucid manner in which he has examined the history of this disease, assigns as one of the causes of its production the suppression of some habitual evacuation—in this case the coïncidence of the suppression and the appearance of the disease is presented. M. Alard has not, however, been able to collect a sufficient mass of evidence to establish the fact; the present case is, therefore, offered merely to excite further observation. Although Alard mentions, on the authority of Hendy, that frambœsia complicates the disease, yet he has not given any detailed case of its concurrence. Judging from the circumstance of its being rarely mentioned by authors, it cannot occur frequently. Frambœsia has been placed by a distinguished writer among the syphilitic diseases. In this case it occurred in a person whose parents had been free of any syphilitic taint, and previous to his exposure to infection. Elephantiasis of the Arabs seems to have been first described by Rhazes. The name has been the cause of much confusion, and it was not until Hillary and Hendy of Barbadoes gave their account of the glandular disease of that island, that the profession appear to have had any definite notions upon the subject. The medical world is indebted to those authors for the suggestions of its being a disease in which the glands and lymphatics are particularly and principally affected. Alard, with great research and with indefatigable industry, has investigated the subject very thoroughly, and proves, from a comparison of the symptoms, that the glandular disease of Barbadoes of Hendy, the perical and andrum of Ceylon, the colic of Japan, the elephantiasis of Rhazes, the fleshy hernia of Prosper Alpinus, and the sarcocele of Egypt, are pathologically the same disease. It is not the intention of the writer of this communication to enter into a detail of his reasoning, and he begs, therefore,

to refer to the author in question. Previous to leaving the subject, he would wish to state, that Alard found this disease infinitely more common in Europe than was supposed, and the truth of this observation has been confirmed by Alibert, Rayer, and Biett.

Respecting its pathology, the writers are not unanimous in their opinions. Alard considers it as uniformly depending upon an inflammation of the lymphatics; Biett and Rayer acknowledge that this is frequently the case, but that it is not necessarily the primitive affection, and that it may occur as a secondary lesion after the enlargement of the other tissues. M. Bouillaud* reports a case occurring in a woman, in which the inferior extremities were enormously distended and exceedingly hard, the disease resembling exactly elephantiasis. Upon a post mortem examination, it was found that the skin and subjacent cellular tissue were an inch and a half thick, having the appearance of the skin of the hog; that the lumbar portion of the vena cava, and all the veins of the inferior extremities were obstructed by deposition of fibrinous matter. The lymphatics were healthy. Hypertrophy in this case would seem to be consecutive upon obliteration of the veins. In the present state of the science, the question of the inflammation of the lymphatics is not determined, and is thus left as a problem to the pathological observer.

The anatomical investigations respecting this disease seem to have been limited principally to the local examinations of the affected part. The pathological researches have not been extended to the internal viscera, and hence the history of the disease in that respect is exceedingly obscure.

Hendy has found the lymphatic ganglions hardened, or in suppuration, and larger than natural; the absorbents were dilated, having their parietes so enfeebled, that it was impossible to distend them by an injection. The areolar structure of the cellular tissue is distended by a thick, viscous, gelatinous fluid, mingled with a serous fluid. The cellular tissue is found much developed and hardened. The skin may preserve its natural colour and appearance, but it generally presents an alteration of structure; it is ordinarily much thickened.

M. Andral reports a post mortem examination of a patient in whom one of the legs was enormously distended by elephantiasis. Upon dissection of this limb, the subcutaneous and inter-muscular cellular tissue was found hard and much developed, resembling the sub-mucous cellular tissue when in a scirrhous state, indurated and

* Archives Générales de Médecine. Tome 1re, p. 567.

becoming more dense as it approached the cutis vera; this was much thickened, and frequently could not be separated from the sub-cellular tissue; it was not, however, either injected or modified in its colour. Above this was found a tissue evidently distinct from the dermis, and which appeared to be to this what the villi are to the intestinal mucous tissue. Between these papillæ and the epidermis were three distinct laminæ; one, the most internal, extremely delicate, and which filled up the inequalities of the subjacent papillæ, was formed of a cellulo-fibrous tissue, and received no vessels, it corresponds with the "couche albide profonde" of GAULTIER, or the "couche epidermique" of DUTROCHET. A second, exterior to this, composed of dark-coloured, delicate filaments, interlaced in every direction, formed a net-work analogous to the coloured lamina of the skin of negroes. Finally, a third directly beneath the epidermis, which was variable in thickness, sometimes merely presenting a white line similar to that mentioned as overlaying the papillary structure, at other times thicker, harder, like a series of small superposed scales, corresponding with the "couche albide superficielle" of Gaultier, and the "couche cornèe of M. Dutrochet.

From these facts it follows, that the dermis or cutis vera is composed of two parts, which ordinarily confounded, have, however, so dependent a condition upon each other, that it is only in certain pathological states that they can be isolated.*

Much of the uncertainty of this disease doubtless arises from the fact of numerous diseases pathologically different, being called by the name of elephantiasis of the Arabs. Thus, some authors designate by this title every enlargement or swelling of the cellular tissue of the limbs, of the scrotum, of the face, independently of those by œdema or infiltration of blood.

M. Alard restricts the appellation to a particular affection of the skin, and the subcutaneous tissue and lymphatic system, which is announced at first by the formation of a hard cord, which is painful, knotted, following the course of the lymphatics and glands, and characterized subsequently by a swelling and permanent induration and augmentation of the skin and cellular tissue, with morbid increase of adipose matter, accompanied by a serous and gelatinous effusion in the diseased parts, the dimensions of which often become enormous.

Various causes are assigned for the production of this disease. Thus, insufficient nourishment, or food of a bad quality; excessive heat, with a moist atmosphere charged with the exhalations from a

* Andral, Anatomie Pathologique. Tome 1re, p. 169 à 175.

marshy soil; extreme neglect of cleanliness, &c. are all considered as being important agents in its production.

Climate unquestionably has a direct influence upon its formation. In the Island of Barbadoes this disease is endemic, and cases of it are so numerous among the inhabitants, that the title of "Barbadoes leg" is one of its most common appellations. Hendy considers that the destruction of the forests, which formerly covered that island, is the cause of its remarkable prevalence. The temperature, in consequence of this disappearance of the woods, is remarkably hot and arid, and he refers the proximate cause of the disease to these characteristics of the climate.

Alard, who examines in detail the question of the causes, arrives at the conclusion, that the formation of the disease is not owing to the quality of the water, the nourishment of the individual, the heat, dryness, or humidity of the climate, but that it depends upon sudden exposure, when heated, to currents of air.* He also proves satisfactorily from many observations, that the disease is neither hereditary nor contagious.

The symptoms of the disease as given by this writer, are the following:—The attack is sudden and unexpected. At first a pain is experienced in a gland, or in the course of the principal trunks of the lymphatics; these vessels are almost always hard, knotted, and presenting the appearance of small, tumefied glands, which are oftentimes discoloured. Sometimes the course of this cord which follows the pain is indicated by a red line, unaccompanied by elevations; this is always the case when the attack has been slight. The diseased part becomes red, swells, and presents an erysipelatous appearance, and is often phlegmonous. The concomitant fever, if the attack be severe, is preceded by a chill, and accompanied by intense thirst, nausea and vomiting; if the chill be severe, the reäction is correspondent. After a longer or shorter duration the fever disappears, and the affected part becomes swollen, and continues inflamed for several days. The inflammation ceases, but the swelling and enlargement continue; it appears to be œdematous in the commencement of the disease, but after a few attacks, the diseased part becomes very hard, and does not yield to the pressure of the finger. Frequent erysipelatous attacks supervene, and the permanent enlargement, which is the consequence, soon manifests the character of the inflammation. The disease may attack any part of the body, but it ordinarily commences upon the feet or malleolus, by the ap-

* Histoire de l'Elephantiasis des Arabes, par Alard. From page 323 to 354.

pearance of small, red lines, which soon extend to the legs and thighs.

Guillemeau, who studied the disease very attentively in the Isle of France, remarks, that generally only one foot is primitively affected, but that after the thigh of the diseased limb begins to enlarge, then the other manifests the commencement of the disease at the malleolus.*

When the disorder attacks the inferior region of the abdomen, the signs which present are rather more obscure. It produces sharp pain, much uneasiness, but without any marked character; but the enormous distention of the abdomen which succeeds these pains, or the tumefactions round the verge of the anus, or of the enlargement of labia in women, or of the scrotum in men, soon dissipate the first uncertainty.

The skin not being the primitive seat of the disease, is not necessarily affected; thus, it sometimes presents merely a whiter appearance, with a slight hardening or resistance upon pressure, *(renitance,)* sometimes the subcutaneous veins are enlarged, varicose tumours result, and the skin is of a violet colour. This tissue, however, does sometimes present various alterations. Thus, in addition to the erysipelatous appearance previously mentioned, vesiculous inflammation is often presented; in this case a slight effusion ensues, followed by thin, soft, yellowish scales; in other instances appearances similar to those of ichthyosis take place; finally, in certain circumstances, fissures with ulcerations ensue, which become covered with thick, yellow scales.

The lymphatic glands oftentimes are hardened and scirrhous, or suppurate, or even become gangrenous, and frequently deep, fetid ulcerations ensue in the limbs after their size has become enormous.

Treatment.—Respecting the treatment, much is yet to be decided. Biett recommends that topical depletion by leeches should be employed at the commencement of the disease, when the inflammation of the lymphatic vessels is manifested by their redness and hardness; the leeches should not, however, be applied *directly* upon the course of the vessels, but a little on either side. In conjunction with this, he uses emollient applications, and enjoins entire rest. In the chronic state, (in which it is generally seen,) venesection has been proposed, but its success does not seem to recommend it; in some cases, indeed, it has proved positively detrimental. Rayer recommends very highly, scarifications along the course of the lymphatics,

* Alibert, Dermatoses Lepreuses, p. 239.

and this is a favourite remedy of Lisfranc, who reports many cases where the result has been very satisfactory.*

The experience of the Hôpital St. Louis is, however, in favour of a different course, and the eminent physician,† of that institution considers that the best treatment consists in compressions, friction, and the use of local vapour baths. Compression is made by a bandage from an inch to an inch and a half in width, and applied by a moderate force. The frictions should be made with an ointment of hydriodate of potash in the proportion of hydriodate, ℥ss. to adeps, ℥j.; this application, however, is to be relinquished whenever an acute inflammation supervenes. Whilst in the vapour bath, the patient should be directed to use friction upon the diseased part. As regards the amputation of the affected limb, experience is decidedly adverse to its employment, as the disease almost invariably attacks other members.

The internal treatment being very similar to that of the elephantiasis of the Greeks, will be given in the remarks of that disease.

Elephantiasis of the Greeks.—Mr. L. a lawyer, aged twenty-eight, born at Crepa in Alentejo, in Portugal, entered the hospital of St. Louis in the winter of 1832. The patient is a large, muscular man, with black eyes and hair; his intelligence and literary acquirements are remarkably great. He gives the following history of his case:—His parents enjoyed good health, and had never had any cutaneous disease. He had no serious indisposition until the sixteenth year of his age, (1820,) when the present disease commenced by an extreme feebleness in the ring and little finger of the left hand; he lost the power of extending them voluntarily, they became flexed against the palm of the hand, and it was necessary to employ the right hand when he wished to straighten them. This loss of movement has gradually increased, and he now finds it impossible to overcome the flexion. In 1827 a discoloration of from three to four inches square, of a light-brown colour, (café au lait clair,) slightly elevated, appeared upon the calf of the left leg. This spot was insensible to slight pressure, and it required a sharp blow before the patient perceived any sensation in it. This insensibility extended over the whole limb; and in illustration of this fact, he mentions, that being near a stove he was severely burned, but was not aware of the injury until he observed the consequent vesication.

In 1828 a small tubercle, of the size of a pea, appeared below the

* Rayer, Maladies de la Peau. Art. Elephantiasis des Arabes. † Biett.

chin, which was repeatedly cut by the patient in shaving himself: this tubercle was followed by several others, and in 1830 the entire face was covered. No assignable cause can be given for the production of the present disease. The patient has never had the slightest syphilitic symptoms, has never committed excesses of any kind, and his situation in life has always secured to him all possible comforts.

I saw him for the first time in January of 1832, and his appearance, which has been but slightly modified since, was as follows:—

The entire face was of a brownish-yellow colour, (bistre of the painters,) the nose, eyebrows, and more especially the vicinity of the chin, are covered with tubercles of different dimensions, varying in size from that of a pea to a hazel-nut. The smaller tubercles are convex; the larger flattened. When examined closely, their colour is redder than that of the face. They are hard and incompressible.

These elevations produced a singular effect upon the physiognomy of the patient: the beard continues to grow from among the groups on the chin, whilst the hair of the eyebrows has fallen, and the entire face is peculiar: many of the students imagine that it resembles that of the lion. The arms are covered with spots more or less raised above the level of the skin, some are merely perceptible to the touch, whilst others are elevated from one to two lines. Their colour varies from a light brown, (café au lait,) to that of the darkest bistre. The skin where they exist is insensible, but in the interspaces of the elevations it is remarkably white and delicate.

On the left arm, where the patient was burned, we observe slightly depressed cicatrices of a violet colour. The skin on the hands is extremely fine and delicate, and redder than usual. The fingers of both hands are flexed; those of the left immoveable. The patient can feebly grasp objects for a short time with the right hand. The neck and body are entirely free of cutaneous disease.

The inferior extremities are covered with spots analogous to those on the arms. On the upper part of both feet are large cicatrices, slightly depressed, of a red colour, caused by the burn of 1827, and which frequently ulcerate; these ulcers are round, with perpendicular edges, which heal by rest and the frequent use of the vapour bath. The general health of the patient is good, but in the spring and autumn he has violent attacks of pain in the head; the tubercles then increase in size, become redder, and are extremely painful upon pressure: combined with these symptoms are—a frequent pulse, loss of appetite, and obstinate constipation. Venesection uniformly relieves him, whilst leeches applied to the neck produce no beneficial effect.

On the 15th of November, 1833, the patient experienced all the symptoms above-mentioned attended with great prostration of strength. Pulse 95. These were the precursors of an erysipelas of the face, which was first observed on the following day. The face became red, tumefied, and painful; the tongue white; thirst extreme. Venesection and lemonade.

17th. Large vesicles have formed on the cheeks, but on the lips and chin a puriform secretion has taken place. The acute symptoms of yesterday are slightly modified; the skin is moist and covered with perspiration. From this time the disease rapidly declined, and at the end of ten days the skin has assumed its ordinary brown tint. The tubercles of the forehead and nose were less prominent, but the lips and cheeks were covered with thick, dark-coloured crusts, which fell off spontaneously at the end of a week.

The primitive disease of the face was evidently rendered much better by this attack of erysipelas. The tubercles were flattened and diminished in size, their colour became more like that of the healthy skin; the eyes were less sunken into the orbit, and the chin not so prominent. A circumstance connected with this attack of erysipelas, produced a strong impression upon the medical attendants of Mr. L. He had persuaded himself the erysipelas would prove fatal, and it was, with feelings bordering on despair, that he found his health would be reëstablished.

Many modes of treating the disease were adopted. At the commencement of 1832, M. Biett prescribed the proto-iodide of mercury; it was gradually increased until given in the dose of three grains a day, of which the patient took eighty pills. This treatment produced no diminution of the tubercles, and the violent pains it caused in the stomach, prevented any further employment of it. After this, recourse was had to numerous vesications, of an inch and a quarter in diameter, followed by a cauterization with per-nitrate of mercury: this also caused intolerable pain, and was abandoned. Subsequently, the size of the blisters was diminished to one-fourth of an inch, and the vesicated surface was washed with a solution of nitrate of silver. The tubercles on the cheek and chin were diminished in volume by these applications, but this result was scarcely obtained upon one part of the face before they reäppeared upon another, rendering it very evident that the melioration was but momentary. The patient after remaining for several months in Paris without any very great permanent amelioration, returned to Portugal in January, 1834.

Remarks.—Much obscurity has arisen from the circumstance of two diseases so different in character as the malady of Barbadoes,

and that, of which we have just detailed an observation, being called by the same generic title of elephantiasis. The elephantiasis of the Arabs is entirely distinct in its appearance and character from this affection. It does not present the tubercles which are developed in the skin and the subcutaneous tissue, but consists in an enlargement of one or more parts of the body, and especially of the legs. The skin in elephantiasis of the Arabs, is not, as in that of the Greeks, primitively affected.

The elephantiasis of the Greeks has been attributed to a syphilitic origin, but on insufficient evidence. In the case of Mr. L. there had never been any venereal infection. Again, the appearance of syphilitic tumours are unlike in colour, in density, and in volume. The tumours of elephantiasis are larger, softer, and have not the copper tint. The syphilitic ulcerations have deep, perpendicular edges: their bases are grayish, and surrounded by a hard cellular tissue: their form is almost circular, and unlike the superficial ulcers which are situated on a soft, fungous tumour, which constitutes that of the elephantiasis of the Greeks.

One of the most remarkable symptoms which attends this disease, is the loss of sensibility in the parts affected. This has been remarked by almost all pathologists who have written upon the subject, excepting Rayer, who mentions two cases in which this phenomenon was wanting.*

A very interesting circumstance connected with the history of this case, is the amelioration of the disease in consequence of the occurrence of erysipelas. M. Rayer reports an observation in which a similar effect took place, and after repeated attacks of erysipelas, an inveterate elephantiasis was almost entirely cured. Similar facts have been observed by M. Biett, and with the "view of increasing the vitality of the affected parts at the commencement of the disease," he employs dry frictions, volatile liniments, or, what he prefers, vesicatories upon the spots and tubercles. Under this plan of treatment, several of his patients have recovered. When the disease is more advanced, he recommends frictions with the ointment of hydriodate of potash, (Hydriodate potas. ℈j. to Adeps, ℥j.) which he has found highly serviceable. Conjoined with these topical applications, he also employs the local vapour bath, thrown in a jet upon the affected parts. If the disease be general, vapour baths for the entire body are recommended.

When the disease has been of long duration, and the tubercles dis-

* Rayer. Maladie de la Peau. Tome 1re, page 660.

seminated over a large surface, in addition to lotions slightly irritating, he recommends alkaline or sulphur baths. An internal treatment is also demanded; he uses accordingly the sudorifics—the tincture of cantharides and the arsenical preparations. The decoction of sarsaparilla with guaiacum, squills with a small quantity of Daphne mazereon may be administered to the patient. His usual dose of the tincture of cantharides is, at the commencement of its exhibition, three drops in the morning before eating, and gradually increasing to twenty or twenty-five. M. Biett gives, however, the preference to the arsenical preparations. Of Fowler's solution he recommends three or four drops a day at the commencement, gradually increasing to twenty or thirty, but watching with great care its effects upon the system, and regulating its administration accordingly. The experience of M. Biett, in the internal use of the different preparations of iodine, is not yet sufficiently great to permit him to give a definite opinion respecting their merits. Reasoning from analogy, however, this would appear to be among the most valuable means of combating this disease.

In India the Asiatic pills, consisting of one-thirteenth of a grain of arsenic to nine times that quantity of black pepper, have been much used, and cases are reported where the result has been favourable to its employment.*

M. de Pous has seen a cure effected by the use of the Lisbon diet drink conjoined with squills. M. Daynac a case of cure by the use of the hydrochlorate of gold combined with the powder of the Lycopodium clavatum, and applied by frictions to the tongue and gums. Robinson has lauded very highly the Asclepias gigantea pulverized, in combination with calomel and the antimonial powder.†

Calomel does not appear to have been much employed by the continental European practitioners, and we have very few cases reported by them in which it was used. This powerful agent should not be omitted whilst speaking of the remedies employed in the treatment of elephantiasis. But the facts collected on the therapeutic history of this disease are not yet sufficient, to say positively what are the best means of combating it. M. Alibert remarks, with great truth, "tout est à rechercher, tout est à decouvrir dans le traitement de cette maladie." He urges the great importance of attention to the food and habits of the patient.

It is much to be regretted that the observations respecting this

* Rayer. Maladie de la Peau. Tome 1re, page 687.

† Alibert. Clinique de l'Hôpital St. Louis.

disease, and those of cutaneous diseases in general, have been so vague and unsatisfactory. Had the rigid accuracy which characterizes the founder of "the numerical system of observation"* been adopted, what positive and certain results should we not have seen? Much, however, is to be expected from that eminent physiologist, M. Biett: and, from the great mass of facts which he has collected, this still obscure part of medicine will probably be much elucidated.

The anatomico-pathological appearances have been reported too vaguely to present any definite notion of the lesions which may characterize this disease.

Inflammation of the skin after recurring repeatedly on the same part causes a tuberculous induration, having a white appearance, and which resists the scalpel. The skin which covers these indurations is generally thinner than that on healthy surfaces.

Tubercles are frequently found on the mucous surfaces of the mouth, pharynx and larynx. In cases where the voice of the patient was much altered, tubercles with ulcerations were invariably found in the larynx: in one instance the arytenoid cartilages were almost entirely destroyed. The lungs are generally tuberculous, and the peritoneum and mesentery are also implicated in the same manner. The mucous coat of the intestines are reported as being almost always more or less ulcerated; and the glands of Peyer are frequently the seat of ulceration.

Alibert and the Baron Larrey cite cases where the bones were found carious or spongy.

Elephantiasis Topica, (Plenck.)—Frederic, aged seven and a half, was born in the Island of Trinidad, of a French father and Indian mother, both of whom enjoyed excellent health, and were free of cutaneous disease. He left America at three and a half years of age, previous to which time he had always been very healthy. His appearance is that of a delicate child, with but little muscular development; dark eyes; black hair; very intelligent, and of remarkable quickness of perception. Shortly after his arrival in France he had an attack of continued fever. The present disease commenced in the month of August, 1830. The first symptom which was manifested, was a difficulty in holding the pen in writing; the indicator of the right hand became flexed, and the child lost the ability of extending it voluntarily by its extensor muscles. The middle finger of the same hand soon afterwards became also flexed, and the wrist was extremely weak. The power of extension of the right hand becoming more

* M. Louis.

and more impaired, his father took him to the springs of Neris in the autumn of 1831, at which place he passed six weeks. It was there that the first ulceration of the fingers took place, and caused the loss of the nail of the indicator of the right hand: since that time the disease has made continued progress.

December 23d, 1832, present situation.—Right hand. The arm being in pronation, the hand and wrist falls perpendicularly by its own weight, and the child finds it impossible to raise it, except by a general movement of the whole arm. The action of the flexor muscles, however, is unimpaired: he can bend the wrist, or grasp substances between his fingers. The different bones of the fingers are flexed on each other, and upon those of the metacarpus. The terminal bones of the indicator, as well as that of the third finger, have been separated by ulceration at the joint. The nails of all the other fingers have fallen off by ulceration, leaving surfaces more or less concave, of a pale-red colour in the centre, dry, cracked, and resembling ulcerated chilblains in the process of healing. The rest of the terminal extremities of the fingers are covered with a hardened skin, which in places is also ulcerated. Beside these alterations of structure, there is an ulceration at the junction of the second and third pha anges of the ring finger.

Left hand.—The patient can readily extend and flex this hand on the forearm, although all the phalanges of the fingers of the second and third row, are permanently bent on the first, and cannot be extended by their proper extensor muscles. The thumb is uninjured. The indicator has a transversal fissure with a red base, at the junction of the first with the second phalanx; at the other joint of the same finger is an elliptical ulceration of the size of a small bean which commenced fifteen days ago.—*Middle finger.* At the base of the nail is a round ulceration surrounded with a yellow, indurated skin. The terminal bone of the middle finger has fallen by ulceration, and the rounded extremity is covered with a hard, thick skin, like that covering the parts of the feet which are pressed upon in walking. There is also a slight ulceration on a level with the articulation of the first and second bones. The little finger is uninjured.

Right foot.—At the junction of the fifth metatarsal with the tarsal bone, exists an elliptical ulceration one-fourth of an inch long, with a red base, and surrounded by a yellow skin of a hardness equal to that of horn. Below the patella of the same leg, are seen two brown cicatrices, which are the traces of previous ulcerations.

The sensibility of the hands is very obtuse; the child does not perceive a slight touch, and does not feel unless the fingers are strongly pressed, or picked with a sharp instrument.

None of the ulcerations have been either preceded, accompanied, or followed by any pain. The child is very cheerful, takes great pleasure in his sports, and the sensibility of his diseased hands is so obtuse that he frequently scratches up the earth with them. His general health is excellent. *Treatment*—Baths for the hands every day for an hour, in decoction of poppy-heads; infusion of hops for drink, with nourishing and tonic diet.

April 6th.—On the right foot, behind the cicatrices previously mentioned, a vesicle of the size of a hazle-nut made its appearance. It is perfectly round, is formed by the elevation of the epidermis only, and contains a serosity slightly thickened; it is not surrounded by any traces of an inflammatory circle. The child does not suffer any pain, and his nurse is confident that he has not been burnt. Next day the vesicle, (bulle,) broke spontaneously, and left a superficial ulcer of the same size with a very dry surface.

19th. The ulceration has not extended superficially, but has increased in depth. It is attended with very slight suppuration; is not painful, its colour is a pale-red; is without granulations, and its borders are perpendicular.

28th. Same state of ulcer.

May 1st.—Numerous fleshy granulations are observed at the bottom of the ulceration; the suppuration is rather more abundant.

15th. The place of the ulceration is now indicated by a small depressed surface, slightly red, where the skin is finer than the rest, and insensible to the touch. During the spring he had frequent paroxysms of spasmodic cough, which rendered it necessary to have recourse to venesection. There did not appear to be any connexion between this cough and the disease of the skin.

December.—The cutaneous disease has not made any progress, with the exception, that in the month of July, a vesicle similar to that last mentioned, appeared on the right knee, which disappeared at the end of three weeks. The general health of the child is excellent.

Remarks.—This variety of elephantiasis has been described by Plenck under the appellation placed at the head of the observation. M. Alibert remarks in his clinique, that medical travellers in India have brought him great quantities of the nails which had spontaneously fallen off from the fingers of the persons affected with this disease. M. Bonpland relates that the disarticulation of the joints followed by sloughing and loss of the bones of the hand are of frequent occurrence in South America: even the teeth fall from the alveoli as a result of this affection.

ART. V. *On Belladonna in Pertussis.* By SAMUEL JACKSON, M. D. of Northumberland, Pennsylvania.

HOW long since hooping-cough was first known, or how far it extends over the inhabitants of the earth, we must leave to men of more recondite learning; but it seems now more than probable, that nearly every human being from this time to the end of the world is destined to suffer this painful malady, from which therefore there must arise an aggregate of distress, which no finite mind can at all comprehend. Nor is it to be included among the safe diseases, since more perish of it by a hundred-fold than of both hydrophobia and tetanus together, maladies which have excited far more interest, both in and out of the profession; and if we mistake not, this mortality is to be attributed to the fact, that physicians have hertofore done so little towards the cure, that nine-tenths of the people never apply to them in this disease, till a fatal peripneumony supervenes, and the patient can no longer breathe. The subjects of it too, are generally children, very often infants at the breast, whose sufferings, above all others, we ought to sympathize with, and endeavour to relieve.

Belladonna having been so highly extolled by various physicians in Europe, for its antispasmodic virtues in this disease, we were therefore induced, in the winter of 1831, to make some experiments with it in our own practice.

We have always been decidedly averse to the polypharmacy of our transatlantic brethren; but in this case, wherein their experiments were to be tested, it was considered as unfair to reject any part of their combinations. The medicine was therefore given in mixture with sulphur and ipecacuanha; and the doses of this mixture were alternated with prussic acid, according to the method of Dr. KAHLEISS, as may be seen in Vol. VI. p. 238, of this Journal.

These medicines were given day after day to several patients without the slightest effect. We did not then advert to the fact, that the principal remedy may be given with perfect safety even to a child, till dilatation of the pupil takes place, or it is most certain that we should have given it in larger doses, and for a longer time. But ere this thought came in mind, we had thrown aside the medicine with contempt, and the disease having passed away in the vicinity, we had no opportunity of further experiments. Nor must it be left unnoted, that our belladonna was afterwards found to be utterly inert, to which circumstance we shall have occasion to revert towards the end of this paper. But one point then appeared to be

ascertained by this experiment, that prussic acid, sulphur, and ipecacuanha, which were given at the same time, made no impression on the disease. The acid in particular, was proved to be useless, for it was given in much larger doses than directed by Dr. Kahleiss, because some dependence was to be placed on a medicine which had been so often and so highly extolled both in this and other species of cough, as well as in other spasmodic diseases. That the acid was of good quality, we had abundant proof from other experiments. What effect this sedative might have, if given to the very utmost limits of safety, it is impossible to ascertain in little children, who are unable to give a just account of their feelings; but with respect to belladonna, the effect on the pupil is a satisfactory index, as we shall see in the progress of our paper.

In the subsequent December, 1832, the disease invaded our own family, and as there were five children to go through it of various ages, from eleven to three years, we entertained no hope of seeing the end of our troubles for several months, and therefore we prepared our minds for a most comfortless, and even distressing winter.

Our second child, a girl in her ninth year, had high fever, and her cough was so violent, that the blood streamed from her nose at almost every paroxysm. This too was the mere catarrhal cough that precedes the spasmodic and more distressing form of the disease. She was bled once, purged gently, took tartar emetic in nauseating doses, with an abundance of linseed tea; thus the fever was soon reduced, and the characteristic cough began to be developed. We then commenced with extract of belladonna, giving it simply triturated with water, in what doses we do not recollect, but it was given freely till the pupils were greatly dilated, and her vision so confused, that she could not read large print. To reach this point, did not require more than two days, when the complaint being plainly mitigated, the medicine was for the present omitted. In about twenty-four hours the pupils began to contract, and vision to become more distinct; the belladonna was therefore resumed, and given in larger doses than before. How long she took it, or how large were the doses, we do not now recollect; nor is this point material to our present purpose, as we shall treat of it particularly towards the end; but we do very distinctly recollect that the relief was altogether unexpected and incredible, for in a few days, certainly not more than ten from the time she began the belladonna, the child was totally cured. We do not presume to say, that she coughed none, but we do say, that her fever was gone; her appetite ravenous; that she was

able to attend to all her lessons, and that her cough, if she had any, would have passed unnoticed in any family.

The other four children were soon attacked, and two of them with great severity, as it regards the mere cough. They were all treated as was the first, with the single exception of bleeding, and they all recovered with the same facility. They had no relapses from cold, though they all rode out frequently, and many miles too in the depth of winter; nay, they appeared to have suffered none from either the disease or its remedy.

The principal misfortune attending our experiments was this—that from this time there were very few cases for further trials, the epidemic of the preceding year having pretty well pervaded the country. A few more cases however did present, and the medicine was nearly as efficacious in them also, and would have proved equally so, it is presumed, could we have ventured to give it in as large doses as we did to our own children, who were constantly under our eyes.

About two months ago we had another very striking proof of the correctness of this practice. There now live in Selinsgrove two brothers, Henry and George Snyder, sons of the late Governor of Pennsylvania, both men of strong and cultivated minds. George's children were first attacked with hooping-cough, and we recommended the belladonna. It soon dilated the pupils; confused the vision; rendered the older children unable to read; parched the infant's mouth, rendering it unable to suck, hence it was abandoned in a panic, and other medicines prescribed, we know not what.

Henry's children took the malady from George's; as these were the only cases in that vicinity, and of course it broke out upon them some weeks later. He used the belladonna as George had done till some dilatation of the pupil was observed, and then finding little or no advantage from it, he became sadly discouraged and began to inquire what further could be done. We then urged his resuming the medicine, and stated our own experience—let us see then what he wrote to me in a few days.

Selinsgrove, April 2d, 1834.

Dear Sir,

The night after you left us our babe coughed very badly, and kept us up nearly all night. In the morning I commenced with the belladonna, and gave it to all three of the children, to the little one five drops, and with the most prompt and happy effect. The two oldest do not cough at all through the night, and the little one not more than once or twice at furthest. During the day they are worse, but this is to be attributed to their running about so much. The medicine is nearly all used, please to send some more.

Yours, H. W. SNYDER.

Selinsgrove, June 10th, 1834.

Dear Sir,

In reply to your inquiry relative to the effects of the belladonna on the hooping-cough, I will state that about mid-winter my three children, beginning with the oldest, took the disease, and were coughing badly when I commenced giving the belladonna under your directions. The effect produced after some days perseverance, was indeed astonishing. It acted like a charm. The children all slept perfectly well throughout the night, and during the day seldom coughed, unless they exerted themselves too much in their play, when the excitement would bring on a mild fit of coughing. In the space of five or six weeks from the beginning* they were entirely cured.

Very respectfully,

Your obedient servant,

H. W. SNYDER.

It certainly requires some courage to give this medicine in the most efficacious manner, and this fact, it is presumed, will deter many from giving it as they ought. George Snyder was frightened by the panic of his family physician, and hence his children are still coughing, whilst his brother Henry, who possessed some medical philosophy himself, persevered and performed a cure many weeks ago. And here we cannot refrain from relating our own alarm on one occasion of giving this medicine. Early in the morning we prescribed the belladonna for four of our children, and then left home for Selinsgrove, seven miles distant; but while employed in this town, we began to ruminate on what might be the consequence, and soon fell into a most outrageous panic. We rode home with all possible precipitation, thinking of nothing the whole way but convulsions, deliriums, swoonings, and all the frightful effects of the narcotic poisons, but upon our arrival all was well, though the medicine had been faithfully given.

It is experience, and this alone, that can fortify us against these fears. In delirium tremens, in tetanus, in spasmodic colic—how tremendous must be our doses of opium if we expect to relieve pain or procure sleep, without which the patient must die! We remember the time when we shuddered at having prescribed ten grains of opium in mania a potu, whereas we can now go to bed very comfortably after having given twenty grains with orders to repeat the dose should the patient not become drowsy in four hours. Thus, the experience of one epidemic pertussis would render our practice easy and certain even in cases of the tenderest infants.

If any one then shall condescend to try this method of curing

* That is, from the time they first took the disease.

hooping-cough, let him first remove the greater part of the inflammation by bleeding, laxatives, low diet, nauseating doses of tartar emetic, and an abundance of milk-warm linseed tea. Bleeding and blistering may be necessary at the onset, and even in the progress, if inflammation supervene as it is very apt to do upon weak or unsound lungs. Leeching or cupping may often be more suitable, nor can it require much medical acumen to determine on this point. But many cases will occur in which the belladonna may be given almost from the first, at the same time that the above-mentioned antiphlogistics are in use.

The next point is to ascertain whether your medicine is really belladonna, or some vile imposition. A year ago we sent to a friend in Philadelphia to procure us an ounce of belladonna, and one of hyosciamus. He did not go whither he was directed to procure them, and thus it happened that both parcels were nothing but hyosciamus. Our olfactory organs are remarkably obtuse, and hence, upon first smelling one bottle, and then the next, the deception was not apparent. Well! we applied some of this supposed belladonna to a gentleman's eye for the purpose of tearing open the pupil, contracted by an iritis, but it was all in vain—no effect was produced on the eye, but a sad disappointment and vexation on the poor gentleman's mind.

But suppose the medicine be actually extract of belladonna, it is two chances to one if it be active. What I first used in 1831, as above related, was utterly worthless, though just obtained from a very careful apothecary in Philadelphia; the parcel that George Snyder first used, he obtained from Harrisburg, and it too was inert. In Europe it would appear, that the powdered leaves and root are more in use, and since extracts are too often fallacious, it would be well if that respectable body of men, the physicians in Philadelphia, would take care that the apothecaries provide those more certain preparations. We made several efforts to obtain them, but was answered that they were not known in the shops of Philadelphia.

Suppose then, that you are provided with the extract; dissolve one grain in a drachm of cold water, and let fall a few drops into some idle person's eye; if it dilate the pupil, and confuse the vision very seriously for twenty-four hours, the medicine is good. But it would be well to try it still further, by giving it to another person internally; if to an adult, in doses of three grains every two hours, till the effect is produced, or the medicine proved to be inert. It was by applying it to our own eyes, that we ascertained the utter worthlessness of that which first deceived us in 1831, but this was after all

opportunity of using a better parcel had passed away for that year. When our own child was attacked in 1832, we found a portion of the medicine which had been in the house for several years, and had therefore been supposed to be inert, but upon dropping a solution into our own eyes, it was quickly ascertained to be good.

Suppose then, that the system is well prepared for the belladonna, and that you have some which is certainly of good quality; let the extract be triturated with water, to which, in order to prevent fermentation, add a suitable proportion of proof spirit; give this to a child three months old in such doses every three hours, from sunrise till bed-time; that each dose shall contain one-sixth of a grain of the extract; to a child of two years old a full grain may be given; to one four years a grain and a half, and from these data the medium dose for any age can be easily ascertained. But with respect to the dose, it is certain that we know but little, as our experience has been very limited, and the strength of extracts is very uncertain.

The effects on the system must be carefully watched, and as soon as dilatation of the pupil takes place, the medicine must either be omitted altogether, or given in much smaller doses. We consider it as far the safest to give no more until we may be satisfied that the effects of the first exhibition are beginning to pass off. The reason of this is too evident to the regular practitioner, and others must take the fact, if they are not capable of the reasoning.

As soon as the system begins to rise from under its influence, which may be known in the infant by the state of the pupil, let it be resumed, and given in larger doses than before, so as to make a strong impression. It is now that its powers become apparent, but the dose must be increased, for, like conium, its effects on the system diminish most wonderfully in proportion to the doses administered. The disease will now begin to yield, and how much longer the medicine is to be continued, or what coädjuvants may or ought to be used, let every judicious physician determine for himself, when the case with all its necessities are before him. We are not writing a treatise on the subject of pertussis, but merely endeavouring to show the great and almost incredible power of a single medicine therein.

It is a great comfort in the free use of this narcotic, that a harmless dilatation of the pupil will probably always give us timely notice of the approaching subduction of the system, for, freely as we have given it, there was no other unpleasant effect observed, unless the confusion of vision. Even the eruption which has been supposed to be prophylactic in scarlatina, was not produced in any of these cases. It is true, Mr. George Snyder thought it produced a dryness of the

fauces, which prevented his child of two or three months old from sucking, and this is very probable, as this effect has been commonly observed from an over-dose of the medicine. But we do not recollect that any of our patients were thus distressed, and therefore it seems probable that the child was over-dosed, or perhaps had fever, which predisposed it to be thus irritated and parched. But this dryness may surely be overcome by the constant use of some cold, acidulated mucilage. Henry Snyder's child, six months old, as above related by himself, was almost cured of the most violent grade of the cough in a few days, but no such dryness was noticed.

Such then is the easy victory which we are likely to obtain over this once frightful disease, and for this we are indebted to the genius and industry of Germany. We believe that the belladonna has been seldom used to any good purpose in pertussis by our American physicians. There is only one case reported by them in the whole mass of this Journal—that by Dr. VALK, Vol. VII. page 417—which is very satisfactory. Professor CHAPMAN speaks of it with very little respect in the 5th edition of his Therapeutics, and Professor EBERLE, in his Materia Medica, gives it credit for benefiting only two cases out of twelve. He adds, however, for our comfort, that he "apprehended the extract he employed was not very good." Let us, then, in the midst of these doubts and discrepancies, implore those persons who may be hereafter disposed to repeat our experiments—1, to be certain that their medicine is active; 2, that they give it freely; 3, that they do not rest satisfied with an imperfect trial, always remembering that they may deceive themselves, and also be deceived by others. Their first experiments ought to be made among honest, intelligent people, or at least among such as they have known to be faithful. They ought to remember that to cure a disease, does not consist in giving a certain popular medicine therein, but it is to produce on the morbid system a certain catenation of effects, which the learned experience of the physician supposes to be necessary or conducive to the end in view. If these effects do not become visible, his labour is lost, his patient not cured, and the remedy condemned. All men of learning must acknowledge this, yet all our systems of Materia Medica are written precisely as they would have been, had they been attempted by PODALIRIUS or MACHAON; they deal largely in the application of medicines to various diseases, but the indications to be fulfilled, and the effects to be produced on the system, are rarely considered.

In the present case, the premises, the reasoning, and the conclusion, are all within a very narrow compass. The mere symptomato-

logy of hooping-cough has long and justly ranked it among spasmodic diseases; hence it was only required to ascertain what medicine might subdue the spasms without superinducing other and worse irritations. Assafœtida has long been used with some advantage, but it is feeble, and hardly worthy of notice; opium is the most powerful of all the antispasmodics in common use, but if given early in the disease, it irritates and brings on fever; prussic acid and digitalis have both been used with some advantage, but were they even as powerful as belladonna, we are doubtful concerning their adaptation to general use. There are no means of knowing, as in belladonna, when we have carried them to their utmost verge of safety in little children. Stramonium has been used it is said with success, which is very probable, since it possesses most of the properties of belladonna. It, too, will dilate the pupil, and give timely warning of danger.

It is a favourite opinion of the present writer, that too little attention has been given to that class of medicines which are directly sedative. Who could have anticipated that in ten-grain doses of tartar emetic, a sedative and a cure would be found for peripneumony? or who could have believed that swimming across the Thames in the delirium of pestis, would have carried off the whole disease? That direct sedatives are within our power, and that they bring this hitherto wayward disease within the grasp of the humblest capacity, is certain; and since physicians have thus ascertained the nature of the disease, and the indications of cure, not from preconceived theories, mere *idola specus*, but from multiplied experience through many generations, it is fondly to be hoped that even better medicines than belladonna may yet be discovered. The acetated preparations of opium, as the acetate of morphia and the acid tincture of denarcotized opium, we have found to be much more safe and useful in this disease than common laudanum, and this we anticipated from the fact that they are far less apt to bring on costiveness, or to obstruct expectoration. They may, no doubt, be often given with great advantage towards the close of the disease.

There is, however, a still more promising method of using opium, for which we may refer to Vol. V. p. 501, of this Journal. Draw a blister on the epigastric region, remove the epidermis, and dust over it a half-grain of morphium mixed with a little starch. Renew the application every evening, and renew the blister also when the first dries up. Dr. Meyer, of Minden, relates that he thus cured five violent cases in eight days, and without using any other remedy than a single emetic in each case. Here, then, if we mistake not, is a very plausible remedy, but surely it would be much more physiolo-

gical to apply the blister to the back, where it is known to operate more powerfully on the substance of the lungs, as well as more directly on the centre of nervous influence.

The question then is—not whether hooping-cough be a curable disease, but which is the most eligible of all the curative means within our reach. Surely those physicians who may first have an opportunity of contending with it in the epidemic form, will not neglect to settle this question by multiplied experiments and indubitable testimony. At present we fear that all is uncertain, and even incredible, unless to those who have seen with their own eyes, and therefore, in the favourite language of Bacon, "we note the subject as wanting."

Northumberland, June 7th, 1834.

ART. VI. *Case of Ununited Fracture, successfully treated by Friction.* By ISAAC PARRISH, M. D. one of the Surgeons to the Wills' Hospital for the Relief of the Lame and Blind.

SINCE the principle of exciting inflammation in the surfaces of fractured portions of bone, has been so successfully illustrated by our distinguished countryman, Dr. PHYSICK, the subject of ununited fracture has received a large share of attention from surgeons both in this country and abroad. Several other methods of practice, besides the introduction of the seton, the plan originally proposed, have been supposed to be adapted to particular cases, and have been successfully executed.

The following case exhibits a rare instance of the practicability of effecting the process of agglutination without a resort to the knife or the seton, but simply by trituration of the fractured surfaces of the ununited bone upon each other. This practice would perhaps prove effectual only in a few instances; in the present case several circumstances concurred to render the result peculiarly favourable.—First. The humerus being the seat of fracture. Secondly. The unusual obliquity of the fractured surfaces. Thirdly. The excessive wasting and loss of muscular power in the limb. Fourthly. The robust state of the patient's constitution and his temperate habits.

CASE.—Samuel Sapp, a stout, athletic man, aged about twenty-seven years, from New Jersey, applied to my father, during the last summer, concerning an ununited fracture of the humerus. He stated

that on the 1st of March, 1833, while engaged in his occupation, as one of the deck-hands on board the steam-boat Trenton, he was dragged overboard by becoming entangled in the rope, and in attempting to save himself by seizing the railings, his left arm was fractured.

He immediately applied to a surgeon in a neighbouring town, who carefully adjusted the fragments, and placed the limb in splints; the injured parts being but slightly painful, the first dressings were allowed to remain undisturbed for about three weeks, when other splints were substituted, and continued on the limb, with occasional alterations, for three months. At the end of this period, finding no improvement, his physician advised him to seek further advice.

On removing the splints, the limb was found to be much reduced in size, its muscular power was obliterated, and its capillary circulation feeble. He was advised to lay aside the splints and bandages, to use the limb moderately, and to keep up a steady system of external frictions, and requested to return to the city in cool weather.

On his return in the autumn, no improvement was manifest; and by the advice of my father, he placed himself under the care of my friend, Dr. William Ashmead, and myself.

On a careful examination of the parts, we found an unusual obliquity in the fractured portions, the surfaces exposed being not less than three inches in extent, the edges of these surfaces, the rounded extremities of the fragments, and the crevice separating the opposing surfaces of the fracture, could be distinctly traced by the fingers. This examination was rendered peculiarly satisfactory, in consequence of the emaciation and flaccidity of the limb.

Owing to the remarkable extent of the fracture, and the loss of muscular power in the arm, the fragments, which in a more vigorous state of the surrounding parts, might have been kept in apposition, were separated from each other to a greater or less extent, as they were influenced by the position of the limb. When the forearm was flexed upon the arm, in the usual attitude for fractured humerus, the surfaces of the fragments were separated throughout their whole extent, but more particularly at their upper portion—and it was only in one position that their apposition was effected.

The limb being placed in that position, which we found upon trial effected a perfect coäptation of the parts, the upper and lower portions of the broken bone were grasped by the hands, and a firm, gliding motion communicated, so that the surfaces could be felt rubbing upon each other. This process was continued for several minutes,

and the limb was then secured in this position by light dressings in an angular box—a piece of thin board being firmly bound over the seat of fracture.

This process was repeated for several successive mornings, and was performed by Dr. Ashmead or myself: the few first trials excited but little sensation in the fractured surfaces, though the force used was as great as we could command. In a few days, however, the patient began to feel pain, which increased at every repetition of the process, until it became acute. The fractured ends were less moveable, heat and action were reëstablished in the limb, and we were obliged to diminish the frequency and severity of the friction.

In about a month, bony union became evident at the lower extremity of the fracture, which proceeded rapidly, and so agglutinated the lower portion as to prevent the necessity of the box: shooting pains were frequently experienced in the limb, and any attempt to disturb it produced considerable suffering. Under these circumstances we declined interfering with the salutary operations of nature, which proceeded most happily. In about two months after the commencement of the practice, we had the satisfaction of observing that a firm bed of callous was thrown out over the whole surface of this extensive fracture.

The muscles soon acquired their accustomed volume and force, and the man has since been pursuing his laborious occupation.

Philadelphia, 4th Mo. 1834.

ART. VII. *A Case of Hypertrophy of the Mammæ.* By S. C. HUSTON, M. D. Resident Physician in the Philadelphia Alms-house.

AT the solicitation of my friends I am induced to publish the following case which fell under my personal charge. Even should no practical results accrue from its publication, to the scientific observer it will still be interesting as affording a curious instance of inordinate organic development.

Charlotte Russel, a coloured girl, had from early life been an inmate of the Philadelphia Alms-house. Of her early history nothing worth commemorating is related prior to the age of puberty. At this critical period when nature institutes a new series of actions in the system, and all the vital forces are augmented, the customary changes are represented to have taken place. Her left breast, however, was observed disproportionately to enlarge, and at the time of her removal,

four months after she had completed her fourteenth year, had attained a formidable size. Its unusual magnitude attracted the notice, and became a ground of objection on the part of the gentleman in whose service she was about to engage. It was urged, however, by the physicians of the house, that this mammoth production would dwindle to its ordinary size as she advanced in years, and the rest of the body became more matured. With this "quietus" from the medical staff, she was admitted as a domestic into the family of Mr. Henry Miller. But as if all the energies of her system had been concentrated in the mammæ, their unnatural development continued to be steadily progressive until about six months since, when from some inexplicable cause, both breasts seem to have received a new resistless impulse, and rapidly to have enlarged to their present enormous dimensions. To obviate the inconvenience of such a ponderous mass, a laced-jacket was constantly worn, but the incumbrance did not in any degree disable her from the performance of her ordinary domestic duties. Her activity was even remarkable; she could with the greatest facility climb a tree, or engage in the sportive gambols of youth. Her general health appears to have suffered but little derangement from her peculiar formation; we have no evidence, however, that she had menstruated more than once, and then it is represented to have been but scanty in quantity. Be this as it may, on Friday, April 14th, she was admitted as a patient into one of the wards of this house. At the time of her admission she had just completed her sixteenth year. On examining the mammæ a large superficial slough was discovered, oc-

cupying the most depending part of the left breast—the result of a recent contusion. She appeared to be suffering excruciating pain. Her tongue was furred; her bowels constipated; the surface of the mammæ hot; and the pulse evinced considerable febrile irritation. To relieve these indications the appropriate remedies were employed.

Tuesday, 18*th*.—Patient still complained of intense suffering. The whole surface of the mammæ now exhibited a disposition to sphacelate. Hectic fever became established—at times she was delirious, and her strength was fast ebbing away. Under such circumstances no treatment could be instituted with any prospect of radical relief. All that could be done was to temporize as long as possible, to sustain her declining strength and mitigate her sufferings by the exhibition of narcotics. In this hopeless state she continued to languish till the 22d, when she expired.

Autopsy.—Externally the mammæ presented the appearance of two large oviform masses, rising above the clavicle, and extending below the umbilicus. No traces of the nipple could be detected, having been completely embedded by the enormous distention of the parietes of the mammæ. On measuring each breast, the dimensions were ascertained to be as follows:—

Right breast.—Greatest circumference	- -	34 inches.
Lesser do.	- - -	18 do.
Weight	- - - - -	12 lbs.
Left breast.—Greatest circumference	- -	42 inches.
Lesser do.	- - -	26 do.
Weight	- - - - -	20 lbs.

On removing the right breast and exposing its interior, instead of a mass of disease or an accumulation of fluid, (as a superficial examination might have induced the belief,) it proved to be a mere hypertrophy of the organ unconnected with structural disease. The adipose and cellular tissues as well as the whole glandular apparatus were enormously enlarged, but no appearance of disease or exudation of fluid were perceptible. In short, a healthy structure was found, whose only anomaly was its mammoth proportions.

On examining the organs of generation, the ovaria were found to be larger than natural, and apparently diseased. The uterus did not exceed the ordinary size of females at her age, but two-thirds of its inner surface was coated with a dense covering of coagulable lymph. The muscular system was moderately developed. The inferior extremities, from the constant effort necessary to sustain so great a burden, exhibited considerable muscular firmness. The upper extremities, however, were somewhat emaciated and relaxed in fibre. In stature she was about five feet—the medium size, perhaps, of girls at her age.

Remarks.—In reviewing the case, one fact strikes us with considerable force, viz.—that this surprising development of the mammæ was not effected at the expense of any particular organ. It might readily have been supposed that the incessant demand on the animal economy for the growth and maintenance of such an enormous mass would in some way have retarded the development of the rest of the body. On the contrary, notwithstanding this irregular determination of the nutritive elements of the body, each organ seems to have received its full and legitimate supply. The uterus, whose sympathies are most intimately associated with the mammæ, does not appear to have suffered any diminution of its ordinary size from this connexion. Its functional derangement is perhaps explicable, from the fact, that the ovaria were diseased, and two-thirds of the secreting surface of the uterus were clogged with an exudation of coagulable lymph.

But for the early termination of this case, we might perhaps have been enabled to add an account of the successful extirpation of the mammæ. Diseased masses of nearly equal weight and dimensions have been removed without impairing the health or engendering a single bad symptom. From the healthy structure of these tumours, there is every reason to believe an operation would have been crowned with success, had an opportunity been presented before the surface of the mammæ had begun to ulcerate, or the constitution of the patient been shattered by disease.

ART. VIII. *An Endeavour to show that the Cholera, which existed on Folly Island, near Charleston, neither Arose from nor was Propagated by Means of Contagion.* By E. C. KECKELEY, M. D. of Charleston, S. C.

THE brig Amelia, Captain Dickinson, sailed from New York on the 19th of October, 1832, bound to New Orleans, with one hundred and odd passengers, of which number three or four only were cabin-passengers, the remainder steerage. The voyage was boisterous in the extreme, and they were much confined below. After being at sea six days, cholera broke out among the steerage passengers. The captain put in into Five-fathom Hole, intending to come into port on account of the leaky condition of the brig; but some accident happening to the cable, he was compelled again to put to sea. In crossing the bar the brig thumped several times severely, and caused the leak to increase to such a degree, that it was deemed necessary to run her ashore on the beach of Folly Island, to save the lives of the crew and passengers. This occurred on the 31st of October, 1832. From the commencement of the disease up to this period twenty-four persons had

died, and several remained sick. When the brig grounded, there were six feet water in her hold. The captain and one of the passengers who visited the city authorities, described the condition of the wrecked as one of "pitiable destitution and distress, and as calling for immediate relief." In consequence of this report, blankets, tents, and necessaries, were sent down. Dr. ELFE, the deputy port-physician, visited the island, prescribed for the sick, and announced the nature of the disease on his return to the city.

A boat's crew of wreckers, who had gone down for the purpose of saving the vessel and cargo, having returned to the city, one of them was seized with cholera, and died in Elliott street, one among the most favourable places for the spread of a contagious malady. During this man's illness, he was visited by hundreds of persons, all of whom contagion took compassion on and spared, or who enjoyed the insusceptibility spoken of by the contagionists. The rest of the crew were ordered back to the island, and having embarked, two fell sick, and one died on the passage down.

"The wreckers were reported to have been of exceedingly intemperate and dissolute habits, and to have provoked the disease by their imprudence, exposure, and intoxication."*

"The case which terminated in Elliott street was brought on by extreme intemperance and sleeping in wet clothes, in addition to inhaling the foul air of the brig."†

Two physicians, Drs. JERVEY and PRITCHARD, were in the meantime sent down to afford the requisite medical attendance upon the sick. These two gentlemen having been worn down by the severity of their labours, were relieved by Dr. HUNT, after the lapse of a week. They, however, remained on the island until the total extinction of the disease, free from all complaint except bodily fatigue.

As neither the brig's crew and passengers, nor the wreckers, an additional number of whom had now gone down by permission of the authorities, were willing to remain on the island under quarantine restrictions, eighteen men were detailed from the city guard, under the command of a lieutenant, to perform the duty of a cordon sanitaire. These men were stationed about one hundred and fifty yards from the sick, but in going to and from the landing, they were forced to pass much nearer one of the buildings used as a hospital; nor was it possible to prevent their communicating with the passengers who were dispersed over the island.

The intendant, in his Proclamation, dated November 9th, says, "a portion of the guard have become so dissatisfied and disaffected, as to have formed a resolution to quit the island." "Notwithstand-

* Intendant's Proclamation to the Citizens. † Report of Board of Health.

ing the guard were forbidden to leave their posts, they removed to the other end of the island, and left it unprotected." "The anxiety of the crew and passengers to get off was so great, that it was feared that desperate measures would be resorted to."*

Of four negroes, the *only persons* left on the island by its proprietor, Mr. Milne, three died, one a child and two adults. Of the wreckers *eight* died. Of the guard employed on duty, every man was reported to have been more or less affected with symptoms of cholera, with the exception of the commanding officer; *nine* were reported as seriously attacked, and *one* died. On the 8th of November the wreck was burnt. On the 10th Dr. Hunt's nurse, who, the week previous, had diligently attended on the man who died in Elliott street, died. After the 17th no more cases were reported, the weather about that time becoming remarkably cool. On the 19th the surviving passengers took passage in the Cicero for a southern port. They were *twice* afterwards shipwrecked—once on the Bahamas, and once on Walker's Key, Florida, in neither of which instances did cholera show itself.

The preceding is a brief history of cholera from the time it first appeared on board the Amelia at sea, to its total extinction on Folly Island. By some it has been supposed to favour the belief of the contagiousness of that disease. I will now endeavour to show that it does not, and that every portion of it may be explained without the aid of contagion.

That I may not be misunderstood, it is proper that I should explain what I mean by contagion. Whenever, during the continuance of a disease, a deleterious agent is secreted by the patient's body, which, when brought to act on a healthy individual, will produce a disease specifically similar to the one from which it derives its origin; such agent is called contagion, and the disease with which the patient is affected, is termed a contagious disease. Infection, the variety which has been denominated idio-miasma, is generated by the decomposition of the natural exhalations and excretions of the human body in a state either of health or of disease. If strict attention be paid to the cleanliness both of persons and of things, and if free ventilation is enjoyed, idio-miasma will never exist in any place. It is *always* the result of inattention to cleanliness and ventilation. That cholera has been, and may be produced by infection, I freely admit; that it has ever been produced by contagion, I deny.

The portion of the passengers of the Amelia, among whom cholera first appeared, were predisposed to it before they left New York. It is a fact, that previous to, and during the invasion of any place by

* Intendant's Proclamation.

the disease, the inhabitants *generally* are, to a greater or less degree, affected with "cholerine."* In proportion to the severity and obstinacy of the symptoms constituting cholerine, so is the predisposition to cholera greater or less. It is undeniable, that the class† to which the steerage passengers belonged are always *the first* victims of cholera. This need not be wondered at, when their habits and other circumstances are taken into consideration. Some of the passengers had the disease before sailing. If a predisposition was laid in New York, and every thing warrants such a conclusion, it requires no stretch of the imagination to discover why cholera made its appearance on board the brig. From the tempestuousness of the voyage, the passengers were *much confined* below. The voyage was *unusually* long; hence arose the ill-ventilation and filth. To these may be added bad diet.‡ It cannot be doubted, that the most influential of the causes of cholera, mental anxiety, was also present. These acting upon the predisposition, excited it into action, and cholera was produced.

I consider the remaining part of the voyage as a *strong* argument against the existence of contagion. Although every circumstance which was requisite to render contagion active was present, yet only twenty-four died in seven days. Although more than one hundred persons were confined in the hold of the brig surrounded by the diseased, and although no efforts were, or could be made to arrest the progress of the malady, only a comparatively small number died. Was a better opportunity ever afforded for the extension of a contagious disease? I suppose the argument of "insusceptibility" will be offered in explanation. It would be much better to suppose that the disease, true to its character, selected its victims, or that contagion had nothing to do in the matter.

The cause of cholera among the wreckers has already been pointed out. They were "of exceedingly intemperate and dissolute habits, and provoked the disease by their imprudence, exposure, and intoxication." "The case which occurred in Elliott street, was brought

* In this city, during the month of July, 1832, sixty-eight cases of common cholera morbus were reported by less than twenty-eight physicians.—(*Journal Medical Society.*) Affections of the bowels continued to prevail till winter. Persons who previously had been in the habit of eating the most indigestible articles without any bad effects resulting, could no longer do so. Whence arose this state of things? Several cases occurred which very much resembled Asiatic cholera. Was it possible for contagion, which, according to the contagionists, existed in great abundance in New York at the time, to extend its baneful influence across the Atlantic to this city? Causa latet, vis est notissima.

† Emigrants. Irishmen who were going to work on the Levee at New Orleans.

‡ Principally Irish potatoes.

on by extreme intemperance, and sleeping in wet clothes, in addition to inhaling the foul air of the brig." By the phrase "foul air," it must not be supposed that a contagious atmosphere, or an atmosphere loaded with contagion, is meant. The air of the brig was rendered "foul" by the number of persons who had been crowded together in her, and by filthiness. The air may have been loaded with idio-miasma, because every thing concurred to produce it, and in this way I account for the almost instantaneous attack of the wreckers after going on board. It may be asked, why was cholera produced, and not any other disease? I answer, because there was a predisposition to that particular form of disease. It cannot be denied, that those whose digestive apparatus is most deranged are most liable to become affected with cholera, and vice versa. Intemperance deranges the organs of digestion to an extreme degree. These in the wreckers being more disposed to disease than any other portion of their bodies, became affected by the causes which were present, and yielded to their influence. In all probability they might have escaped, had they laid aside their evil practices. They continued to be intemperate, and exposed themselves more than they had for some time been accustomed to do. These added to the causes already noticed, called the predisposition into action, and cholera was the result.

It is unnecessary to notice the remaining part of the history in detail. If I have shown that cholera was neither produced nor continued by contagion, so far as I have gone, it is established that it did not afterwards extend itself by that means. A disease which does not extend itself by contagion at one time, when all things are favourable, cannot do so at another time, when things are less favourable.

The remaining cases which occurred, may be divided into two classes. The first class includes all those persons who were attacked after having gone on board the brig. I have already shown that causes sufficient for the production of cholera existed in her. It is necessary to seek out the predisposing causes. A considerable degree of anxiety was manifested by all to leave the island. The guard were so disaffected and dissatisfied, that, contrary to positive orders, they left their post, and went to another part of the island, leaving it unguarded. This was the reason why the intendant called upon the citizens to assist in guarding all points of the city where persons coming from the island might land. This was the reason why the citizens were called upon to be on the alert, and to impale upon their bayonets the monster contagion, if it should attempt an ingress into our city. The intendant feared that desperate measures would be resorted to by the crew and passengers of the Amelia, and some others on the island, such was their anxiety to be freed from quarantine. Many were suf-

fering from hope deferred. Many had lost friends and relatives. Disease and death in its most terrible forms, stared all in the face. These were the causes which predisposed, and as soon as exciting causes were applied, disease was manifested.

The second class comprehends all those who were attacked, but who did not visit the brig. The predisposing causes have been already mentioned. I will here state two facts, which could not properly be noticed elsewhere. It was with difficulty that persons could be obtained to bury the dead, and when this last favour was performed, it was done *very slightly*. May not the latter circumstance have had some influence in keeping up the disease? The greater portion of those on the island were lodged in tents. This fact is of some importance, if it be remembered that the sea air is highly injurious during autumn, from its dampness and chilliness.

The predisposing causes being known, it is necessary to look for the exciting. In the present instance, there is but one exciting cause, idio-miasma. It may be, that there were others, but they are not known. From the very nature of things, the formation of idio-miasma could not be prevented. Nurses were wanting, and cleanliness *could not* be observed. I am borne out in my opinion by the fact, that the disease declined, and ceased altogether, as soon as the weather became cool. The predisposing and the exciting causes being known, there is no difficulty in discovering why persons became affected, although they did not visit the brig, the fons et origo mali.

Charleston, May 25th, 1834.

ART. IX. *Remarks on Lithotomy.* By C. R. FINLEY, M. D. Surgeon U. S. Army.

UNTIL the operation of lithotrity shall have reached that degree of perfection which will cause it entirely to supersede lithotomy, any suggestions which may have a tendency to alleviate the suffering, or diminish the fatality attendant on the last-mentioned operation, are entitled to the attention of the profession. With those objects in view, the following brief remarks on the present mode of preparing a patient for the knife, and the treatment subsequent to the operation, are respectfully submitted.

We are directed, and I believe it is a direction generally, if not universally given in the schools, to compel the patient to retain his urine for several hours previous to the operation, that the bladder may be properly distended; and in order to insure this result, we are told to pass a ligature round the prepuce, and place the patient in

charge of an attendant to prevent its removal. Under such treatment, what must be the state of the patient when placed on the table? Will not his system be deranged by febrile excitement and nervous irritability, and his bladder, especially that part immediately concerned in the operation, in a state of high irritation, and if not inflamed, wanting only the application of the knife or gorget, together with the passage of the urine over the recently-divided parts to produce that state of inflammation so justly to be dreaded? Now, suppose, instead of compelling the miserable patient to retain his urine, which is a task peculiarly difficult and distressing to the calculous patient, and rendered doubly so to him through the terror excited by the approaching operation, we were to produce the proper degree of distention by injecting a bland mucilagious liquid into the bladder after the patient is laid on the table, would not the ill effects above-mentioned be avoided?

With regard to the after treatment, I would inquire why, in the lateral operation, (to which only these remarks are intended to apply,) the patient being laid on the sound side, the catheter passed through the urethra into the bladder, and permitted to remain there, the wound may not be closed and healed as far as practicable by the first intention? an event which would be much facilitated by the use of the mucilaginous injection, as the distending fluid, instead of urine—infiltration of urine, from the necessity of enlarging the incision in the bladder, would be much less likely to occur. To protect the edges of the wound from the roughness of the calculus, should be another important consideration; otherwise, an incised may be converted into a lacerated wound. This, in the majority of cases, may be effected by the use of an instrument invented, I think, by Dr. Gibson, Professor of Surgery in the University of Pennsylvania; it consists of a small sac, attached to a handle of six or eight inches in length; the mouth of the sack is composed of a firm, elastic substance, which can be expanded or contracted at pleasure, by a simple mechanical contrivance in the handle. The sac, in a state of contraction, may be introduced through the wound into the bladder, then the mouth being permitted to expand, it may be used as a scoop if it is found necessary to break the stone, or the calculus being seized by the forceps may be placed within the sac, and the mouth being thus closed, the instrument may be withdrawn, presenting only the soft texture of the bag to the edges of the wound. It is supposed, that by adopting the above measures, inflammation of the bladder and of the peritoneum, the most fruitful sources of the fatality consequent to this operation, will be in a great measure prevented.

ART. X. *Cases of Neuralgia, treated by Galvanism.* By THOMAS HARRIS, M. D. Surgeon U. S. Navy, and one of the Surgeons of the Pennsylvania Hospital.*

DEAR DOCTOR—Agreeably to your wish, I send to you a brief statement of the cases of neuralgia which I placed under galvanic treatment.

In June, 1831, I was requested to visit Mr. J. L. aged thirty-eight, affected with epilepsy of several months continuance. His paroxysms occurred daily, were very violent, and were accompanied with such nervous irritability, that he could not endure without complaint the noise of walking across the room. For several years previously to his epileptic attack, he complained of constant pain in his head: this pain, which appeared neuralgic in its character, continued with little intermission, and was particularly violent when I was first consulted.

After making myself acquainted with the treatment which had been pursued in his case, and finding that all the usual remedies had been used without benefit, I determined to try the galvanic apparatus of MANSFORD.†

After this had been applied a few days, the nervous irritation and neuralgic pains began to diminish, though no perceptible impression appeared to be made on his epilepsy. After the expiration of two weeks his neuralgic pain ceased entirely, and his epileptic paroxysms became much less frequent and violent. The weather being warm, the meat became so speedily offensive that he begged me to discontinue its use. Though the instrument did not cure the disease for which it was particularly applied, yet it entirely relieved the patient of the neuralgia.

This unexpected result determined me to make another trial of its utility in the next case of neuralgia that came under my treatment. In July, 1832, I was consulted by Dr. OTTO, in the case of Master J. S. aged eleven years, who had been afflicted with violent neuralgia of his head. The paroxysms always occurred at night when in bed, and continued with increasing violence for eleven months. In the day-time he complained of great lassitude, and was always depressed in spirits.

* This Article ought to have immediately followed Dr. Chapman's, (see Art. I.) but was not received in time.—ED.

† For Mansford's directions for the application of this apparatus, see p. 311, of this No.

In this case there had been used leeches and blisters to the back of the neck, chalybeates, narcotics, and most of the other agents usually recommended in this disease.

I suggested to Dr. Otto the use of the galvanic apparatus, to which he readily assented. It was accordingly applied in the manner already detailed. On the eleventh day of its application the pain entirely ceased, and although two years have elapsed, he has had no return of it.

After fatiguing study he has several times had a return of his lassitude and gloomy spirits. He is now, however, in fine spirits and robust health.

In January, 1833, I was consulted by Mrs. R. aged forty-eight, in relation to a neuralgic affection of her head and face of eight years continuance. She had been under the care of one of our most eminent physicians, who had assiduously applied the usual remedies without effect. She had intervals of ease on two occasions during the warm months.

On the fourth day after the application of the galvanic apparatus the pain began to diminish, and on the twenty-third day it ceased entirely.

In the month of April following she had a slight return of it, occasioned by exposure during a cold, inclement day. This attack yielded to a reäpplication of the apparatus for ten days. She has had another slight return of the disease this spring, but which has been again subdued by galvanism.

In May, 1833, I was applied to by Miss E. D. of this city in case of neuralgia of fourteen years standing. This case in point of acuteness of suffering, was of a most aggravated character. It was diffused over every part of the body. The head, face, tongue, heart, stomach, uterus, and indeed almost every region of system, was by turns invaded by this terrible disease. The galvanic apparatus was applied in this case, and faithfully continued for five weeks. The effect was to mitigate the violence of the disease, but not to cure it.

In the same month I applied the galvanic apparatus to S. T. aged thirty years, a female patient in the Pennsylvania Hospital. She was affected with general neuralgia of six months standing. The galvanic apparatus was applied in this case, and continued for weeks without producing any perceptible benefit.

In November, 1833, Mrs. —— of New York, desired my advice in a case of neuralgia of fourteen years standing. Like the two preceding cases every part of the body was by turns severely affected by this disease. The failure of this agent in the similar cases gave me

little encouragement to hope for success in this. At the request of the suffering lady, however, the apparatus was applied and continued with the exception of short intervals for five months. The lady has returned to New York with the impression that she has been in some degree relieved, but is far from being cured.

In February, 1834, the galvanic plates were applied in the case of Miss P. of Philadelphia, who had been affected with neuralgia of the face for two years. After the tenth day the pain entirely ceased, and she continues quite relieved.

In May, 1834, Mr. T. W. of Maryland, consulted me in a case of neuralgia of the head and face of eighteen months continuance. He had been under medical treatment during the whole of this period, but could not state the names or nature of the medicines which he had taken. His pain was very acute; his nights were sleepless; his digestive functions much impaired, with obstinately constipated bowels. His extremities were cold, and his head inordinately hot. A few ounces of blood was taken from the back of his neck, aperients were given to regulate his bowels, and his feet were placed nightly in a mustard foot-bath. On the third day the galvanic apparatus was applied, and was continued two weeks before any mitigation of the pain was observed. At the expiration of five weeks the patient was entirely relieved of his neuralgia, and his health in every particular entirely restored. Within a few days he has returned to his native state in fine health and spirits.

Of the eight cases which have been treated with the galvanic agent five have been entirely relieved. In every case in which the disease was located in the cerebral nerves, this simple and apparently feeble galvanic apparatus has accomplished cures. On the contrary, where this disease was diffused throughout the body, or located in the spinal nerves, it has failed.

At some future period, and after further experience, I propose communicating to you my views in regard to the modus operandi of galvanism in the cure of neuralgic affections.

Very truly,

THOMAS HARRIS.

Dr. Isaac Hays.

Philadelphia, June 30th, 1834.

ART. XI. *Instance of Destruction of the Uterus, Perineum and Rectum, after Delivery, with Recovery.* By Dr. JOHN SWETT, of Ridgway, New York.

A WOMAN, aged thirty years, of robust constitution, was delivered of her first child on the 28th day of June, 1830, full-grown, after thirty-six hours severe labour. During this preternatural labour blood was abstracted, and three or four doses of opium administered; forceps of a bad construction were unsuccessfully applied by a physician little acquainted with the use of instruments; the parturient pains immediately ceased, palsy and weakness of the lower extremities ensued, with pain in the back and hips. The patient was left in this situation, by her attending accoucheurs, several hours, whilst they reposed on their beds! The child was born with little manual assistance, and without an effort of the parent.

On the 2d day of July I was called and visited this unfortunate female, and found her labouring under very acute pain; pulse one hundred to the minute, vomiting a green and dark-coloured bile. Her friends had despaired of her life.

In this case I administered the sulphate of magnesia in a cathartic dose, which immediately prevented the vomiting, and in a few minutes she requested food, which being allowed her, was found agreeable to the stomach; and as often as the vomiting took place, the same medicine was administered with the same effect as above stated.

On inspection I found the labia pudendi and posterior region in a gangrenous state; for this I prescribed yeast and charcoal, internally and externally, and also the cort. peruv. flav. acidulated with the sulphuric acid, together with wine to support the system.

The 12th day of the same month I found her labouring under tympanitis; I therefore discontinued the former medicines, and administered the ol. ricini freely; directed ablutions of cold water, and a bandage to be applied to the abdomen; in a few hours the bowels were evacuated, a gentle diaphoresis appeared, and she was again relieved from pain.

On the 13th it was found that the fundus uteri had passed into the vagina, and out at the os externum: by a little assistance of the nurse the whole uterine system separated, leaving its destined place of abode.

15*th.* The rectum parted a few inches above the pubes, and was discovered sliding down and passing out between the labia pudendorum: the nurse in my presence took hold of and gently extracted it, the lower end easily separating from the sphincter ani, and with-

out pain to the woman. At this time I proceeded to a further examination, and found the perineum destroyed, so much so as to leave but one orifice to the abdomen, (and that) extending from the os coccygis to the ossa pubis. The sphincter urinæ also had lost its power of contraction, and she labours under an incontinence of urine and fæces. She suffered several weeks with cruritis or phlegmasia dolens, partially submitting to the antiphlogistic plan of treatment.

In the month of November following, by an inspection I found the pelvis to be healed, and could of a certainty discover the purulent discharge flowing from the abdomen. A portion of the intestine had visibly descended into the pelvis three or four inches, folded down, and hung pendulous over the sacrum in the vaginal cavity, and which was sensibly affected with cold air; for this a pessary of fine sponge was applied, and at length found useful in retaining the intestine in the abdomen, and in effectually excluding the cold air. So great was the destruction of parts, and so extensive the orifice, that the eye could trace the whole internal cavity of the pelvis so distinctly in this case that I had ocular demonstration both externally and internally, that the rectum as well as the whole uterine system had separated and were removed. Another fact of which I was informed, and had no reason to doubt, and which should by no means be omitted, is, that the fæces had ever from the time of the above occurrence passed off between the labia.

Notwithstanding all the sufferings of this patient in the entire loss of (these) important viscera, the great length of time she was sick confined to her bed, and the continued inflammation of the abdominal viscera keeping up a purulent discharge, yet her strength, by the assistance of a remarkable appetite, held out, and health was fast returning.

About the 1st of January, 1831, the mammæ began to perform the office of secretion, so that milk flowed in profusion, and continued so about two months and then ceased. This phenomenon happened six months after the extraction of the fœtus, apparently producing no material change in the other functions of the system either by its continuance or cessation. Health now returned with bloom and vigour.

February 16th, 1832.—I am informed by the father of this woman that she can now in some small degree command the urinary organs, and feels a sure confidence that in one year more she shall possess the full command: this is in my opinion possible, but over the fæces she can never have controul. The inconveniences which she must ever for life sustain from incontinence of urine and fæces, are very great: yet her health in every other respect is unexceptionably good to this day, viz. March 24th, 1833.

REVIEWS.

ART. XII. *Embryologie ou Ovologie Humaine, contenant l'Histoire Descriptive et Iconographique de l'Œuf Humain.* Par ALF. A. L. VELPEAU, Chirurgien de l'Hôpital de la Pitié, Agrégé a la Faculté de Médecine de Paris, Professeur d'Anatomie, d'Accouchemens et de Médecine Opératoire, Chevalier de la Légion d'Honneur, Membre de l'Académie Royale de Médecine, de la Société Médicale d'Emulation de Paris, Correspondant des Sociétés Médicales de Tours, Louvain, Rio Janeiro, &c. &c. Accompagnée de quinze planches, dessinées et lithographieés, par A. CHARAL. Paris, 1833. Fol. pp. 104.

Embryology, or Human Ovology, containing the Description and Iconographic History of the Human Ovum. By ALF. A. L. VELPEAU, &c. &c.

Graphic Illustrations of Abortion and the Diseases of Menstruation. Consisting of twelve plates frow drawings engraved on stone, and coloured by Mr. J. PERRY, *and two copperplates from the Philosophical Transactions, coloured by the same Artist: the whole representing forty-five specimens of Aborted Ova and Adventitious Productions of the Uterus, with preliminary Observations, Explanations of the Figures, and remarks, Anatomical and Physiological.* By A. B. GRANVILLE, M. D., F. R. S. &c. London, 1834. 4to. pp. 52.

M. VELPEAU is one of the most prolific, and at the same time, most distinguished writers of the day. Within the last four years he has published three large works, besides others of a minor description:—an Elementary Treatise on the Art of Midwifery, in two volumes, 8vo.—New Elements of Operative Medicine, (with an atlas of twenty plates, in 4to.) in three large volumes, octavo;—and a Treatise on the General, Surgical, and Topographical Anatomy of the Human Body, in two volumes, 8vo., with an atlas of fourteen plates, in 4to.;—all of which have been translated in this country: besides a Memoir on the Faulty Positions of the Fœtus, in 8vo.—a Dissertation on the Generalities of Surgery, and on the Plan to be Pursued in Teaching the Science, in 4to.—Researches on the Spontaneous Cessation of Primary Traumatic Hæmorrhages, and on the Means which may, in certain Cases, be substituted for the Ligature

of Arteries, in octavo; and a Dissertation on the Generalities of Physiology, in quarto; besides the large work now before us, and to which we are desirous of attracting the attention of the profession.

But, although prolific, it must not be presumed, that the productions of M. Velpeau bear signs of hasty concoction. His mind is manifestly of no common order. It is grasping, and retentive; and the materials which he treasures up, are so arranged as to be easily adduced. His productions, too, are chiefly on topics on which he has been accustomed to deliver lectures, so that we can, in some measure, account for the rapid succession of publications—all full of important facts and speculations—and in every way creditable to the author.

That the work before us is no hasty production, and has undergone the "limæ labor ac mora," is sufficiently shown by the fact, that the ideas on which it is founded, were communicated to the *Académie de Médecine* of Paris, in 1824, to the *Société Philomathique*, in 1826, 1827, 1828, and 1829; and the work was subjected, almost in its entire state, to the *Académie des Sciences*, in 1827 and 1828. He asserts, too, in his introduction, that it is the fruit of researches into which he entered so long since as 1821.

As our object is to give a concise account of the more prominent topics insisted on by M. Velpeau, and to inquire into some of the obscure, but deeply interesting questions of fœtal existence, we shall pass by, without further notice, the controversial preface, which occupies twenty-eight folio pages, and is dedicated to "a critical review of the opinions emitted before and since his first publications on the principal points canvassed in the work."

The first section is on the appendages *(annexes)* of the fœtus,—the membranes, vesicles, placenta, and umbilical cord.

The membranes consist of the chorion and amnion; and although furnished by the uterus, yet being a contingent on the state of gestation, the decidua may be added. This last membrane has long been a subject of controversy, and still continues to be so;—various opinions having been entertained regarding the formation of the decidua reflexa especially; each of which has, even now, numerous adherents.

Dr. William Hunter, to whom M. Velpeau awards the discovery of the decidua, conceived it to be thicker the nearer to the time of conception, and that it became gradually thinner during pregnancy; still existing, however, during delivery, and being then thrown off—whence its name *decidua*—and renewed at each pregnancy. He considered it to have three apertures; one corresponding to the os uteri,

and one to each Fallopian tube: that at first it consisted of one layer, adherent to the uterus; but subsequently a second was formed, which adhered to the ovum, and which he called *tunica decidua reflexa.*

The opinions of most of the anatomists of the present day, are in favour of one of two views. It is maintained by some, that one of the first effects of conception, is to cause the secretion of a considerable quantity of a sero-albuminous substance from the inner surface of the uterus; so that the organ becomes filled with it. On the first arrival of the ovum in the uterus, it falls into the midst of this secretion, gradually absorbing a part by its outer substance for its nutrition. The remainder is organized into a double membrane,—one corresponding to the uterus, the other adhering to the ovum. This sero-albuminous substance is conceived to plug up both the orifices of the Fallopian tubes, and that of the uterus.

By others, it is held that the decidua is slightly organized, prior even to the arrival of the ovum, lining the whole of the cavity, and being devoid of apertures: so that, when the ovum passes along the tube, and attains the cornu of the uterus, it pushes the decidua before it; the part so pushed forwards constituting the *tunica decidua reflexa*, and enveloping the whole of the ovum, except at the part where the decidua leaves the uterus to be reflected over it. This is the seat of the future placenta. Such is the opinion of our author.

"Impregnation," he remarks, "occasions a specific excitation in the uterus, promptly followed by an exhalation of coagulable matter. This concretes, and is soon transformed into a kind of cyst or ampulla, filled with a transparent or slightly rose-coloured liquid. This species of bladder is in contact with the whole surface of the uterine cavity, and extends sometimes into the commencement of the tubes, and most frequently into the upper part of the cervix, in the form of solid, concrete cords; but it is never perforated naturally, as Hunter thought, and as Bojanus, Lee, and some other authors still think.

"When the ovule has passed along the tube, it depresses this membrane, glides between it, and the uterus, to the inner surface of which it ultimately glues itself. After this, the decidua is formed of two continuous portions, one very extensive, lining the whole of the womb, except the part which is in contact with the germ, and bearing the name—*uterine, true*, or *external decidua;*—the other, smaller, and pressed upon by the free half of the fecundated vesicle, which it envelopes, constituting the *decidua reflexa*, or *interna*. It is this, which Messrs. Owen and Lee call *ovuline*, but which ought rather to be called *epichorion*. The extent of the former increases in the same proportion as the uterus. The augmentation of the second necessarily follows that of the germ. Hence the cavity which separates them, and which is nothing more than the misshapen cavity of the primitive ampulla, is greater the less the time after the first periods of gestation.

"The *decidua uteri* retains a pretty considerable thickness, especially around the placenta, until the end of gestation. The epichorion, on the contrary, ge-

nerally becomes insensibly thinner, and thinner, so that, at the full period, it is sometimes of extreme tenuity.

"Towards the third or fourth month,—a little sooner or later,—they touch and press upon each other; and remain in a more or less perfect state of contiguity, until the expulsion of the secundines, but they are never confounded, although Hunter, and the majority of those who have treated the same subject since his time, have asserted the contrary. If Mr. Lee has not been able to separate them after the fourth month, it has been owing to his not having taken into account the reflected layer, which rests strongly glued upon the chorion, when we begin to detach the decidua uteri from it, and to his having evidently confounded, in the outset, this last with the internal membrane of the uterus." p. 3.

Between the decidua and false membranes, which are the result of inflammation, M. Velpeau thinks there is no analogy. He regards it as a "simple concretion"—a layer without regular texture, whether we regard the decidua vera or the reflexa; and he argues, that if it were really organized, if it were the seat of exhalation, it ought to contract some adhesion, and be intimately confounded with the inner surface of the uterus, or the circumference of the chorion, which it lines, and covers for nine months.

"Is it from the placenta that it receives its vitality? It is developed for a long time before the placenta begins to be formed. This body can generally be detached from it, as well as the whole of the ovule, up to the second month of gestation, without any thing being destroyed or torn, which could give the least idea of a determinate organization. It is, moreover, sufficient to recollect, that the structure of this singular membrane is precisely the same at the moment of parturition, as at the beginning of pregnancy—a period at which most authors agree that it has no true texture." p. 7.

Being consequently, in his opinion, the "product of an excretion" from the uterine cavity, M. Velpeau gives it the name—"*anhistous* membrane, (from ἀν, privative, and ἱστος, a web,) or "membrane without texture." There has, indeed, been a striking dissatisfaction with the name decidua. Dutrochet has proposed to call it *epione*, Breschet, *perione*, and Burdach, *nidamentum*.

Its use, the author thinks, is to retain the fecundated ovum to a given point of the uterine cavity; and if M. Velpeau's views of its arrangement be accurate, the suggestion is good. In favour of this arrangement a good deal may be said. If there were apertures in the decidua, corresponding to the Fallopian tubes, it would seem that the ovum ought frequently to fall from one of them into the sero-albuminous matter at the cervix uteri, an attachment of the placenta over the os uteri would be likely to occur more frequently than it is known to do. Under M. Velpeau's doctrine, the attachment of the

placenta ought rather to be near the cornu of the uterus, which is known to be the case.

It is not so easy to subscribe to the author's views regarding the "inorganic" nature of the decidua. Many excellent observers have asserted, not only that this membrane exists between the placenta and the uterus, which M. Velpeau's view, of course, renders impossible, but that numerous vessels pass between it, the uterus, and the placenta. We know, too, that the safest and most effectual mode of bringing on premature labour, is by detaching the decidua from the cervix uteri, or, in other words, by breaking up the vessels that form the medium of communication between it and the lining membrane of the uterus. How could this have any effect unless such vessels existed? It may be said, indeed, that the mere separation of the unorganic pellicle, as M. Velpeau designates it, may be a source of irritation, and excite the uterus to the expulsion of its contents; and we do not deny that this is possible. Yet M. Velpeau affirms—"no tissue attaches it to the uterus. It adheres to the inner surface of the organ merely in the manner of an excreted, membraniform shell, *(plaque.")*

As regard the *chorion*—the outermost of the fœtal membranes—much difference of opinion has existed; some supposing it to consist of several layers—others, as M. Velpeau, of one only. The conclusions to which his observations lead him, are as follows:—

"*First.* The chorion—in the human species—is a simple round vesicle."

"*Secondly.* Its villosities are not vessels, but merely small, granulated filaments, which serve at a later period for the development of the vessels of the placenta, on the portion of the ovule that touches the inner surface of the uterus or corresponds to the root of the cord."

These villosities, we think it probable, act as true sponges, to absorb the necessary nutriment for the maintenance of the life of the embryo.

"*Thirdly.* To the granulations of its filaments ought to be referred the origin of the hydatids *en grappe*, sometimes met with in the womb, or forming part of an hydatid mole."

M. Velpeau does not regard these hydatids as vesicular worms, but as arising from an "abnormal development of the granulations, or rather as the product of an aborted ovum, whose small, gangliform bodies have assumed an increase not common to them; and he affirms, that he has a number of preparations in proof of his views.

It has always appeared to us extremely questionable, whether these false conceptions, as they have been considered, are really ace-

phalocysts; and this doubt we have been in the habit of expressing for many years in public; but still the precise mode in which such morbid formations arise is not easy of decision. It *may* take place in the way mentioned by our author, but *we* wait, prior to deciding, for the "particular memoire," which he proposes to issue on the subject.

"*Fourthly.* In the normal or regular state, half, at least, of these gangliform bodies implant themselves in the epichorion, and cease to be developed; whilst the others, in contact with the uterus, or corresponding to the vessels of the cord, constitute the rudiments of the placenta."

This view of the general anatomy and purposes of the granulations is peculiar to M. Velpeau. We shall refer to it presently, when we consider the anatomy of the placenta.

"*Fifthly.* The chorion is not an expansion of the skin, or of any part of the abdominal parietes, as many authors have asserted, and as I, at one time supposed; but it has, from the commencement of gestation, relations, and an intimate continuity with the cellular web of the cord, or of the umbilical vessels."

The opinion, that the chorion is an expansion of the skin, is as old as Hippocrates, and is generally entertained. M. Velpeau himself, as he honestly admits, published some cases in 1824 in support of the view; and it has been maintained, amongst others, by Mondini, Mojon, Roux, Chevreul, and De Blainville. The reasons, however, advanced by M. Velpeau, for the opinion he now entertains, are cogent.

"The chorion forms part of the ovule from the commencement of gestation. The parietes of the abdomen are not developed until after the spine. Before the appearance of the skin the chorion presents the same characters, and the same form as it possesses afterwards. The chorion then, and the skin of the embryo are two parts independent of each other.

"In the first month of its development, the chorion ought to be studied, in order to form an exact idea of its connexion with the other parts of the ovule. The umbilical cord, then very small, appears to be only a small cellular stalk, which terminates in the chorion at one extremity, and in the concavity of the rachidian circle at the other. The amnion attached to this stalk at one point only, which is very close to the embryo, appears to be pierced by it. If we did not admit that the chorion is independent of every other part of the fœtus, it might be considered as the expansion of the cellular web of the umbilical and placental vessels; but as these canals do not appear until some considerable time after fecundation, it is evident that the chorion must serve them as a matrix or canvass, and cannot be produced by them. At a subsequent period, it is so intimately confounded in the cord with the amnion, and especially with the ring of the umbilicus, that it becomes impossible to deny with certainty its continuity with the integuments." p. 19.

"*Sixthly.* It is not multifoliated at any period of its development."

The idea has generally been, amongst descriptive anatomists, that the chorion consists of several layers. The author, however, accords with HUNTER, that there is but one. Many embryologists still maintain the opinion of HALLER, RUYSCH, HEWSON, and others. Amongst these may be named CHEVREUL, MAYGRIER, and DUTROCHET. "In the human ovum," says the last distinguished observer, "there is an *exochorion*, that is, an outer chorion, formed of several layers, and an *endochorion* or inner chorion, resulting also from the *adossement* of several primitive layers." There is, however, as M. Velpeau has correctly observed, after Dutrochet, great obscurity thrown over this minute and intricate point of fœtal anatomy, owing to the same name having been employed for fœtal envelopes very different from each other, whilst different names have been given to the same membrane.

M. Velpeau asserts, that at fifteen days, and three weeks, as at two months, the chorion is simple in the human species, and—

"If, at a later period, other layers are united with it, they belong to bodies not yet described, or which cannot, under any pretext, be considered as its dependencies."

"*Seventhly.* It does not receive either vessels or nerves, which belong properly to it."

On this point great dissidence likewise prevails; and although it might seem that anatomy should be one of the "exact sciences," there is hardly any which is more unfixed, if we regard the different tissues, which are so minute as to require the aid of the microscope. In such cases, wide scope is left for the imagination, and the reckless theorist can devise any arrangement, which will best serve his purpose. Hence it is, that we have the presence of blood-vessels, nerves, and absorbents admitted "from observation" by some, and as strenuously denied by other "*transcendental* anatomists," as they have been lately called in the land of imagination and metaphysical physics. Before we can learn the physiology of organs, it is of course necessary that such organs should be proved to exist; yet the *onus probandi* is far more difficult than the gratuitous belief, that such an organization may be, and is present, and accordingly it is eagerly embraced, provided the assumption will throw any light on the hypothesis of the speculatist. The crying evil with the anatomist, and still more with the credulous physiologist, is, that he knows too much, and too readily takes for facts the assertions and speculations of his distinguished brethren; and nothing but a rational scepticism will correct the evil, and bring him back to the lessons of true observation. It would be an ungracious task, but science could not fail to reap important advantages from it, were some competent indivi-

dual to sift the known from the unknown, and the doubtful, and to classify them accordingly. Fresh experiments might then be instituted, which would substitute certainty in the place of doubt, and dispel that immense mass of false knowledge which yet exists, but which is every day yielding before the lights of more accurate observation and reflection.

The texture of the chorion, as well as of the amnion, M. Velpeau admits to be cellular, and if we call into our aid what analogy has suggested, we should be compelled to infer the existence of both nerves and blood-vessels, and that the membrane, like other varieties of cellular membrane—the serous, for example, is possessed of similar functions; and such is probably the case, even if we admit, with M. Velpeau, that no nerves or blood-vessels can be traced in it. We have strong evidence that both nerves and blood-vessels are present in parts where the anatomical analyst has not yet succeeded in detecting them in health; yet these parts are very sensible, and exhibit vascularity when inflamed. It is known, too, that many anatomists have taken the affirmative side of this particular question. Chaussier and Ribes, for example, and Sir Everard Home and Bauer assert, that they have detected nerves; whilst a host of inquirers have deposed to the presence of blood-vessels. Wrisberg and Sandifort are the chief authorities, however, on that side; whilst Mayer, our old preceptor, Beclard, Lobstein, and M. Velpeau, have never succeeded in finding them.

"In refusing to admit blood-vessels in the shaggy coat of the human ovum," says M. Velpeau, "I rest on the following points. First. No one has seen them so as to leave no doubt on the subject. Secondly. The ineffectual efforts made by M. Lobstein to discover them. Thirdly. My own observations: and Fourthly. I think I have found the reason which has deceived many observers who have admitted them.

"When we endeavour to separate the *decidua reflexa* from the outer surface of the chorion, we soon perceive an indefinite number of filaments passing from one to the other. These filaments, which are more numerous as we approach the placental surface, and the nearer to conception, and which Sandifort and many others have taken for vessels, are mere vestiges of the villous tomentum, which covered the outer surface of the ovule. Now, if a number of physiologists accord a sanguineous circulation and vessels to the chorion, it is because they believe their existence on the decidua demonstrated, and hence they have considered that such must be the case in the membrane immediately beneath it. But this argument falls to the ground, if we prove, as I think I have done, that the former of these laminæ is a mere anorganic concretion." * * *

"The finest injections, the most careful dissections, both of the chorion itself, and of its filaments at an advanced period; and of its shaggy state, and its granulations at an early period, have not left in my mind the slightest doubt. With

the magnifying glass, or with the scalpel, these objects appeared solid, and tore like cellular tissue. I never was able to remark the slightest appearance of a canal." p. 21.

He remarks, however, in a previous paragraph, that he wishes it to be particularly understood, that his assertions apply only to the human female. "In the mare, the outer surface of the chorion is red and *vascular*, from the base to the summit of the ovum." A strong analogical fact, by the way, which ought to make us pause before we are satisfied that our limited powers of observation have proved the negative as regards our own species.

"*Eighthly.* It is of a cellular nature, and is formed by the same mechanism as the serous membranes."

We have already referred to objections which this conclusion suggests to the one preceding. To it, abstractly considered, no objection can be made.

"*Ninthly.* In all animals in which a decidua, or some analogous layer exists, the chorion forms the second membrane of the ovum, proceeding from without to within, and the first, when there is no anhistous concretion, (decidua.")

"*Tenthly.* At the full period, its outer surface, covered by the epichorion and placenta, is reflected over the root of the cord, which it covers as far as the abdomen of the fœtus. Its inner surface is every where in contact with the amnion." p. 23.

The *amnion*, although more frequently spoken of than the chorion, has been, perhaps, less accurately examined; and hence, according to M. Velpeau, almost all writers copy from each other in describing it. What has been said of the chorion, regarding the supply of nerves and blood-vessels, applies also to the amnion. Our author denies their existence in toto; yet, what is singular, he regards the liquor amnii as—

"The product of transudation, or of simple exhalation, like the serosity of the pleura, pericardium, peritoneum, or arachnoid; like the synovial humour of the tendinous sheaths, or of the articulations, and this perspiration has no need whatever of particular canals to effect it; it is a purely vital imbibition, and the filamentous matters that trouble it, the yellow or green flocculi sometimes found in it, belong in no way to it, and are nothing but portions of meconium, or of the *enduit* separated from the fœtus, or else of the vitriform substance, and of the vesicles, that exist primitively between the membranes."*

Yet all these exhalations require, in our view, the action of vessels to effect them. They must be derived *from the blood*, and therefore they must escape from the vessels in which it is contained. What

* Traité élémentaire de l'Art des Accouchemens. Tom. I. p. 253.

we have already observed regarding the non-detection of vessels containing blood—red or white—in the chorion, applies equally to the amnion; and the very fact of a fluid existing in its interior, which is admitted by M. Velpeau, to be exhaled from it, is an additional argument in favour of the presence of vessels.

The author's conclusions with regard to the amnion, in the work before us, are as follows:—

"1. The amnion or *agnelette* is the innermost, and deepest-seated membrane of the human ovum.

"2. In every case in which the germ is not altered, it is separated from the chorion by a space, which is at first very considerable, but which afterwards diminishes insensibly, from the first fortnight to the third or fourth month of pregnancy."

"3. Its outer surface, although less smooth than the other, has neither cellular filaments nor vessels, which can unite it to the chorion."

"4. Its inner surface is primarily very near the embryo, from which it is afterwards removed, in proportion to the development of the ovum."

"5. It is not entirely correct to maintain, with Hippocrates, Harvey, and Burton, (as I believe I have demonstrated myself,) as Dr. Pockels has again asserted, that the amnion is originally continuous with the epidermis, of which it would be only a dependence, or which, in this way, would be produced by it."

"6. In the first month it has no connexion except with the umbilical cord, which seems to perforate it in proceeding towards the spine, to be lost in some of the abdominal viscera."

"7. At a later period, when the parietes of the abdomen are formed, it unites somewhat intimately with the epidermic layer of the embryo, or of the fœtus, so that it is difficult not to admit a real continuity between the two layers."

"8. It contains no vessels that are proper to it, and there never enters more than a single layer into its composition."

"9. The connexions of the amnion with the embryo, in the other mammalia, are the same as in the human species." p. 32.

The second chapter of the work is appropriated to the vesicles that are described as belonging to the human ovum; to wit, the *umbilical*, *allantoid*, and *erythroid*.

The *umbilical vesicle* was unknown to the ancients; and amongst the moderns it is not universally admitted to be a physiological condition; but, on the contrary, is regarded as a morbid formation by many, and we are somewhat surprised to find M. Velpeau remark, that out of about two hundred vesicles, which he had examined in fœtuses under three months of development, he had met with only thirty in which the umbilical vesicle was in a state that could be called natural. p. 39.

With such a fact before him it is not easy to understand how the

author could distinguish the physiological from the pathological condition. If the existence of the vesicle is a part of the physiological or natural process, the majority of cases ought to be healthy or natural; yet he pronounces the thirty in the two hundred to be alone properly formed, and of course one hundred and seventy to be morbid or unnatural.

The umbilical vesicle, according to M. Velpeau, is a small, puriform, round, or spheroidal sac; which, about the fifteenth or twentieth day after fecundation is of the size of a common pea. It probably acquires its greatest dimensions in the course of the third or fourth week. After a month he has always found it smaller. When it becomes reduced to the size of a grain of coriander, which generally happens about the fifth, sixth, or seventh week, it commonly ceases to diminish. After this, it becomes flattened, and disappears insensibly. At times, it is not found after the third month; whilst at others it is seen as late as six months. It is incontestably situated between the chorion and the amnion. Commonly, it is adherent either to the external surface of the amnion, or to the inner surface of the chorion; but at times it is situated loosely between them.

The characters of the *pedicle*, which M. Velpeau terms *pedicule vitellin*, and which attaches the vesicle to the embryo, vary according to the stage of gestation. At the end of the first month, it is not less than two, nor more than six lines long, and about a quarter of a line thick. Where it joins the vesicle it experiences an infundibuliform expansion; not so at the extremity which joins the abdomen.

Its continuity with the intestinal canal in man cannot, he conceives, be doubted. Before the parietes of the abdomen are completely formed, it is divided, as it were, into two portions by the amnion, which it seems to have pierced. Up to twenty or thirty days the pedicle is hollow. In two subjects M. Velpeau was able to press the liquid from the vesicle into the abdomen without lacerating any part. It becomes obliterated at a somewhat uncertain period. Generally, the canal does not exist longer than the expiration of the fifth week; and the obliteration appears to proceed from the umbilicus towards the vesicle, in proportion as the cord becomes complete, and it probably closes first at the ring of the umbilicus.

The parietes of the *vitelline pouch*,—as M. Velpeau also calls it,—from its analogy with the vitelline or yolk-bag of the chick,—are strong, resisting, somewhat thick, and difficult to tear.

As the umbilical vessel of brutes has been admitted to be continuous with the intestinal canal, anatomists have assigned to it and its pedicle three coats. Such is the view of M. Dutrochet. M. Velpeau

has not been able to detect these in the human fœtus. He admits, however, "a *serous surface*, and a *mucous surface*, but not a *serous membrane*, and a *mucous membrane*, still less a *muscular coat*."

The vesicle is evidently supplied with arteries and veins.

"I have observed them," says M. Velpeau, "not only in the substance of the parietes of the vitello-intestinal canal, but also in those of the vesicle itself; twice in the latter, more than twenty times in the umbilical cord. In the first case, I have seen them form a beautiful net-work, and numerous arborescent ramifications, extremely easily traced without any particular preparation, and even with the naked eye. In the second case, they were reduced to two very fine trunks at the side of the vesicle, becoming gradually larger as they approached the abdomen. These vessels, of which Boehmer and Madei appear to have had some notion, which are somewhat coarsely represented in the work of Hunter, which Wrisberg and Blumenbach have described better, which Kieser, Ribes, and Chaussier have made known in France, and which many zoologists have regarded, and still regard, as the only means of communication existing between the embryo, and the umbilical vessel, are known in science under the name *ophphalo-mesenteric* vessels, but rather merit, in my opinion, the title *vitello-mesenteric*, or simply *vitelline*. From my observation, they do not proceed, as has been said, to empty themselves into the superior mesenteric vein and artery. I have remarked, that they communicate with one of the branches of the second or third order of these great canals, with those, in particular, that are distributed to the cœcum. I have often traced them from the abdominal cavity through the ring of the umbilicus, as far as one, two, and even three inches into the cord, in fœtuses six weeks, two, and three months old. At these different periods, however, they ultimately disappeared, and were lost in the spongy tissue of the vitelline pedicle before attaining the vesicle, which must be attributed, doubtless, to the same causes that produced the obliteration of the vitello-intestinal canal. I have several times succeeded in injecting them, when they had the size of a large pear; but their delicacy is generally so great, that they readily give way, unless the greatest precautions be taken." p. 44.

These vessels are regarded as the vessels of nutrition of the umbilical vesicle.

The fluid contained in it, which M. Velpeau calls the *vitelline* liquid, is supposed to possess similar uses with the *vitellus* or yolk in birds. In a favourable case for examination, M. Velpeau found it of a marked pale yellow; opaque; of the consistence of a thickish emulsion, and different in every respect from serosity, to which Albinus, Boerhaave, Wrisberg, and Lobstein have compared it, and from every other fluid of the organism; and he regards it as a nutritive substance, a sort of oil, in a great measure resembling that which constitutes the vitelline fluid of the chick in ovo. Under this point of view its uses would appear to be obvious;—to afford a nutritive fluid for the development of the embryo, until the cord and the vessels

are formed, and until the ovule is accurately connected with the inner surface of the uterus.

"From the moment of fecundation until the ovule is attached to the uterus, the product of human conception is almost entirely like the egg of birds. Free, and independent, like it, of every part of the mother, it must convey with it materials for its support, in the same manner as the chick, inclosed in its shell, requires some substance to serve for its evolution. In the one case, it is true, this arrangement is only temporary, whilst in the other it continues during the whole period of incubation; this difference being owing to the circumstance, that, in the former, incubation takes place in the interior of living organs, organs which can furnish abundant nourishment to the *young plant;* whilst in the second, every thing occurs in the atmosphere, without the parts of the adult animal." p. 45.

The *allantoid vesicle* or *allantois* has been admitted, and denied to be a part of the appendages of the human fœtus, from the earliest periods until the present day. It is situated between the chorion and amnion, and communicates with the urinary bladder, by a canal, called the *urachus.* It has been observed in the dog, sheep, cow, the saurian and ophidian reptiles, birds, &c. It is formed at a very early period; rapidly acquires a considerable capacity; and contains a matter, which is not the same at all periods of gestation, or in all animals.

The description of M. Velpeau by no means satisfies us, that such a vesicle exists in the human subject. He was never able to detect any communication with the urinary bladder, and he is compelled to have recourse to analogy to admit that any such channel has, in reality, existed.

From all his facts, which are sufficiently meagre—

"He *thinks himself authorized* to say, that from the fifth week after conception, till the end of pregnancy, the chorion and the amnion are separated by a transparent, colourless, or slightly greenish-yellow layer. This layer, instead of being a simple serosity, is lamellated after the manner of the vitreous humour of the eye. It diminishes in thickness in a ratio with the development of the other membranes. The quantity of fluid, which its meshes inclose, is, on the contrary, in an inverse ratio with the progress of gestation. Becoming gradually thinner, it is ultimately formed into a homogeneous and pulpy layer, by transforming itself into a simple, gelatinous, or mucous layer, which wholly disappears in many females before the period of accouchement. Several of its lamellæ are glued to the outer surface of the amnion, principally at the root of the umbilical cord." p. 53.

Between this *reticulated body*, as M. Velpeau terms it, *(corps reticulé,)* and the allantoid of oviparous animals, he thinks there is the greatest analogy. Yet the fluid of this body is very different

from the urine, supposed by some to exist in the allantois of animals. His idea is, that it is conservient, like that of the umbilical vesicle, to the nutrition of the fœtus at an early period. The inner surface of the lamellæ, which he examined, was covered by an adherent layer of the cream-like matter contained in its interior, and when examined by the microscope, its parietes had a villous appearance, so that he conceives it to be probable, that the substance of the "*corps reticulé*" is secreted by its own parietes.

"I may further remark," he adds, "that this matter preserves its cream-like, flocculent appearance; its resemblance to an emulsive oil; its characters of a nutritive substance, until the ovule becomes fixed to the uterus, and afterwards rapidly disappears to make way for the albuminous layer, which has to continue until the last stage of pregnancy. In short, since every thing adds to the belief, that the cribriform or reticulated body is analogous, in the human subject, to the allantoid of other vertebrated animals, and as, in the ophidian reptiles, birds, and the mammalia, the matter inclosed by that pouch, is far from resembling urine, we may, I think, affirm, that there is an allantoid in the human ovum."

After all, our ideas regarding this vesicle in man—if it exist at all—are far from being determinate; and this remark applies still more forcibly to the *erythroid vesicle*, described by Dr. Pockels of Brunswick, which is not usually admitted by the obstetrical anatomist. Velpeau asserts, that he has never been able to meet with it.

The last chapter of this section of M. Velpeau's work concerns the *organs of circulation* of the fœtus, regarding some of which, much interesting speculation of an anatomical and physiological character has been indulged in of late.

With regard to the umbilical cord, he asserts, that anatomists are incorrect in stating that the cord does not begin to be formed until after the first month of gestation. The youngest embryo he had an opportunity of dissecting had a cord. At a fortnight and three weeks old, the dimension is three or four lines; and he thinks his examinations lead him to infer, that at every period of fœtal development, the length of the cord is *nearly* equal to that of the body, "if it does not exceed it a little." Prior to the third month, it is irregular, owing to numerous enlargements; but in this month, owing to the absence of these, its bulk becomes much diminished. After this period, it increases in a ratio with the other parts of the fœtus, until the full period of gestation.

Its composition is by no means the same at every period of its evolution. At first, it seems to be nothing more than a small, solid cylinder, to which the amnion does not yet furnish a sheath. After the fifth week, it contains, besides the duct of the umbilical vessel,

the omphalo-mesenteric vessels, and a portion of the urachus, or of the allantoid, and of the intestines. At about two months, the digestive canal enters into the abdomen. The urachus, the vitelline canal, and the vessels become obliterated, so that at three months, as at nine, the umbilical stalk or cord is formed only of two arteries, and a vein of the same name, of the jelly of the cord, or of WHARTON, or the spongy tissue of ROUHAULT, and the membranous sheath, furnished by the amnion and chorion. WRISBERG, SCHREGER, and MICHAELIS have admitted lymphatic vessels in the cord; CHAUSSIER, DURR, RIECK, and others, nerves proceeding from the solar plexus; but M. Velpeau thinks it probable, that these authors were misled by some remains of the urachus, of the omphalo-mesenteric vessels, and of the vitelline canal, &c.; at least, he affirms, he has never been able to verify their assertions, notwithstanding all his care has been directed to the examination, and in this he is confirmed by LOBSTEIN and MECKEL. Here again we have to deplore the *inexactness* of that which ought to be *exact;* and the mind is necessarily compelled to remain in doubt, unless it will pin its faith to the sleeve of one observer rather than another, which is too frequently the case amongst both students and teachers. Instead of waiting for the results of fresh experiments, the *verba magistri* are too potent for them to resist; and as in other cases, in place of searching after truth, they become abettors and partisans, and further inquiry is looked upon as idle.

We have already remarked, that according to the views entertained by M. Velpeau, of the decidua, and the decidua reflexa, no part of this membrane can exist between the placenta and the uterus. The fœtal surface is enveloped by the amnion and chorion, and a "simple pellicle" covers the maternal surface, and unites its different reliefs. Whilst it is attached to the uterus, this surface is regular, and exhibits neither grooves nor orifices of sinuses; but when the placenta is extruded from the womb, its surface is extremely unequal. Lobes of various sizes are perceptible, separated by grooves of greater or less depth; and these appearances are owing, he says, to the uterus rolling the placenta upon itself, to detach and expel it, and thus tearing the thin and "*anorganic*" pellicle that concealed the intervals between its numerous cotyledons.

It is well known, that until of late almost every obstetrical anatomist adopted the division of the placenta into two parts, constituting, as it were, two distinct placentæ—the one *maternal*, the other *fœtal*. Messrs. LEE and RADFORD have, however, contested this point, and have affirmed, with M. Velpeau, that the human placenta is entirely

fœtal. The very fact, indeed, of the existence of a membrane, or as our author calls it, a *membranule*, between the placenta and the uterus, destroys the idea of any adhesion between the placenta and uterus.

Of the arrangement of this membrane we will allow M. Velpeau to speak for himself.

"This membranule, which covers the fungous surface of the placenta, admitted by Arantius, Littre, Hunter, Lobstein, Chaussier, Meckel, and almost every modern anatomist, but rejected by Ruysch, Mery, Rouhault, &c. it seems to me has been generally, but imperfectly understood.

"Some have thought, contrary to the opinion of Wrisberg, that it is only a very thin portion of the decidua. Many vessels furrow it according to the majority of observers. Others think that it passes from one lobe of the placenta to another, without penetrating into the intervals. A yet greater number pretend, on the contrary, that it dips at the same time between the cotyledons, between each fasciculus, and each vascular filaments. Lastly, there are those who believe in its existence during the whole course of gestation, whilst many others affirm, that they have only met with it in the last three or four months.

"Whilst the placenta does not yet form a compact mass, there is no vestige of the layer in question. After the tomentous groupes of the chorion are wholly agglomerated, it appears, on the contrary, to veil, as it were, their summits, and it is soon seen continuous, and confounded with the circle of reünion of the double reflexion of the anhistous membrane. It certainly does not contain vessels; and the idea of a circular venous sinus, which, on the assertion of certain anatomists, exists at the circumference of the placenta, can only be the fruit of inattentive observation.

"The utero-placental *feuillet* is arranged in this respect, like the arachnoid of the brain. On a level with the projecting portions, its adhesion is close, whilst opposite the interlobar anfractuosities, it may be always detached under the form of a delicate and transparent lamella. Like the arachnoid, too, it remains at the surface, and does not generally penetrate into the parenchyma. Its nature is similar to that of the pellicles, which envelope almost all fibrinous concretions, immediately after their formation. It is not a tissue. Placed in water, it is destroyed, dissolved, in a few days, with the same facility as every other membraniform concretion.

"A layer of deposit, *(couche de dépôt,)* much thicker, more fragile, and less regular than the preceding, surrounds all the vascular trunks. This has given rise to the belief, that the vessels of the placenta ramify even in the substance of the decidua; that the chorion is composed of several layers; that the anhistous membrane sends a layer over the external surface, and another over the fœtal surface of the placenta, and that the minute pellicle of the latter is folded between every fibril of its lobes and lobules. The lamellæ, of which it is composed, appear to me to be the product of a particular exudation of the womb, of the chorion, and its tomentous fasciæ. In this respect they bear some analogy to the decidua, from which, however, they differ in this, that they are not evident until a long time after the arrival of the ovum in the uterus, whilst the anhistous ampulla forms immediately after fecundation; and one enjoys great

suppleness, and a certain degree of elasticity, whilst the others are dry, hard, and break almost as readily as glass.

"Perhaps, however, there is here rather a dispute of words, than a difference of sentiment as regards things. The uterine exudation, which gives birth to the decidua, does not seem to me to be able to be produced as well by the outer surface of the ovule or its villosities, as by the interior of the Fallopian tube. Extra-uterine pregnancies afford proof of this. The anhistous layer, which at that time surrounds the product of conception, has not certainly proceeded from a mucous membrane. Now this layer, which only differs from the decidua by its less cohesion, is almost wholly like that found on the placenta, on the placental portion of the chorion, and which agglutinates all the fibrils of the vascular parenchyma. With such an arrangement we may conceive, that the placenta appears to be continuous with the decidua, and even covered by it; that its outer pellicle has been described by M. Bojanus under the name of *secondary decidua, decidua serotina*, and that all the concretions, which interlard its different parts, admit of being derived from the primitive anhistous membrane, although they are really distinct from it." p. 66.

Until of late, anatomists have described large vessels passing directly from the uterus to the placenta, and the rupture of these vessels has been presumed to give rise to uterine hæmorrhage. Recently, Lee, Radford, and Millard, have denied that any such distribution exists. They, however, admit a decidua between the uterus and placenta, and affirm, that small vessels pass between the uterus, decidua, and placenta. M. Velpeau, we have seen, does not allow the existence of a decidua, but admits an interposed pellicle. He denies, however, that any utero-placental vessels exist in the generality of cases.

The common mode in which the placenta is developed, is supposed to be as follows:—When the ovule has descended into the uterus, the villi of its outer surface are elevated, and traverse the decidua, to become attached to the uterus, and in this way the placenta results. These villi, which are at first distributed regularly over the whole surface of the ovule, soon group and collect at one part, whilst at every other, the ovule becomes smoother and transparent. The placenta, however, is not distinguishable until the end of the second month, at which time it covers two-thirds, or at the least half the ovum, and its relative width becomes less, in proportion as the pregnancy is more advanced.

The explanation of Velpeau, founded upon his views regarding the decidua, and decidua reflexa, is different. He affirms, that after the villous ovum has glided between the uterus and the decidua, and become fixed to the organ, which has to contain it during the whole period of gestation, it remains in contact with it by one-half, whilst the other depresses the anhistous membrane, (decidua.) A disk of

the ovule necessarily exists, which is not separated from the uterus by any membrane, and there the placenta becomes developed. He thinks, moreover, that the placenta commences, in some measure, with the arrival of the ovule in the uterus, and that its dimensions, compared with that of the ovum, are nearly the same from the commencement to the end of its development.

One part of this explanation appears to us to account most satisfactorily for the fact of the placenta being formed so frequently near the cornua of the uterus, instead of over the os uteri as it would appear it ought to be, if the ovule fell from the Fallopian tubes into the cavity of the decidua, according to ordinary belief. The statistics of obstetrics, adduced by M. Velpeau, further confirm his view. Of thirty-four females, who died in a state of pregnancy, or recently delivered, at the *Hôpital de Perfectionnement*, an examination of the parts exhibited that in twenty the centre of the placenta corresponded to the orifice of the Fallopian tube; in three it was anterior to it; in two posterior; in three beneath, and in six near the fundus of the uterus.

The mode in which the placenta is attached to the uterus, has been an interesting question with physiologists, and it has been revived of late by Messrs. Lee, Radford, &c. and by our author. The common opinion has been, that the large venous canals of the uterus are uninterruptedly continuous with those of the placenta. Wharton and Reus, and a number of others conceive, that at an early period of pregnancy the part of the uterus in contact with the ovum becomes fungous or spongy, and that these *fungosities*, which constitute the uterine placenta, commingle and unite with those of the chorion so intimately, that laceration necessarily occurs when the placenta is extended, and Dubois goes so far as to consider the milk fever as a true traumatic disease, produced by such rupture! but it would be a waste of space to dwell on the different idle speculations that have been indulged on the subject.

The opinion of M. Velpeau, and of Messrs. Lee, Radford, &c. is, that the maternal vessels do not terminate in the placenta; but that apertures—portions scooped out, as it were, exist in their parietes, which are closed up, according to the latter gentlemen, by the decidua;—according to M. Velpeau, by the membranule or anorganic pellicle, which, as we have seen, he considers to cover the uterine surface of the placenta, or by some valvular arrangement, the nature of which has yet to be discovered; but these apertures have no connexion, in his opinion, with any vascular orifice, either in the decidua or placenta. Under these views, if uterine hæmorrhage should

take place, owing to a separation of the placenta, it would probably be, because the plug to the apertures in the sides of the maternal vessels had been thus removed.

The mode in which these authors consider the placenta to be attached to the uterus is, so far as it goes, somewhat unfavourable to the idea generally entertained, that the maternal vessels pour their blood into the maternal side of the placenta, whence it is taken up by the radicles of the umbilical vein. Whatever blood is exhaled must necessarily pass through the decidua, according to Lee and Radford, or through the pellicle, according to Velpeau. The last individual thinks, that no blood, in the state in which it is in the maternal vessels, proceeds directly to the placenta, but that it experiences first of all some elaboration, and the reasons he assigns for this belief are the following:—

"If we were to persist to consider that the fœtus receives blood ready formed from the mother, all we could affirm would be, that this fluid enters the placenta by simple porosities, by a sort of imbibition, which might be explained by a simple continuity of surface. To this I could have no objection to offer, if the blood did not appear to pass at no time in its ordinary state to the ovum. It certainly does not, in the earliest periods at least, for the shaggy chorion does not contain vessels until a later period, and the filaments are never hollow as far as their extremities. On the other hand, the experiments of Autenrieth and my own show, that the blood of the fœtus has not the appearance of that of the mother. It is at first rose-coloured, then it becomes more red, then blackish, and presents no difference of colour in veins or arteries. M. Tiedemann and others have noticed, that it contains a much greater proportion of serum than in the adult, and it is less coagulable. Every thing, in short, proves that its chemical composition is very unlike that of the blood of the mother. Even if chemistry had not exhibited these differences, we should have been compelled to believe that this fluid, like food, requires to be adapted to every age—fœtal or extra-uterine, and that the blood of an adult female would be in some measure a poison for so frail a being as the embryo, or the fœtus. If it were useful to insist on this point, I might add, that according to the microscopical experiments of MM. Prévost and Dumas, the globules of the blood are so small in the fœtus, that it would not be possible for those of the adult to traverse the same canals, and the same orifices, without disturbing the equilibrium of the functions, and immediately producing death. If, therefore, the blood is poured into the cells of the placenta, or pumped up by the porosities of that organ, it must at least undergo an elaboration, an important modification, before entering the umbilical vein. But what is the nature of this modification? I know not." p. 74.

This leads us to glance at the deeply interesting subject of fœtal nutrition, respecting which there is such difference of sentiment, as to exhibit clearly, that much respecting it is yet uncertain; whilst many points have a sort of traditionary authority, that prevents them from

being sifted and examined in the manner they ought, but regarding many of which, it seems to us, a well-founded scepticism may be indulged.

One of the least tenable hypotheses that have been entertained regarding the embryo at its first formation is, that for the first month—and why the period is limited to this is not apparent, the vitality of the fœtus is not independent, but is a part, as it were, an offset of that of the mother; that it has no separate powers of existence; no faculty of self-evolution; and that its organs are nourished by the plastic materials, which it incessantly derives from the maternal blood.

It appears to us manifest, that from the very moment of the union of the materials furnished by both sexes at a fecundating copulation, the elements of the new being must exist, and it must possess within itself the faculty of self-evolution; otherwise, how can we understand the phenomena that take place on the ovarium after fecundation. It is admitted, that this last organ furnishes the unfecundated ovum, and that the sperm must come in contact with this ovum; after which, fecundation is accomplished, and immediately the ovum undergoes a further development, escapes from the viscus in which it was formed, is laid hold of by the Fallopian tube, passes through this canal, and is deposited in the interior of the uterus, with which it ultimately contracts adhesions.

But all this requires time. The ovum does not probably reach the uterus, in the human female, until after the expiration of a week—more or less—and some time must elapse before such adhesions are effected, and consequently before any thing like maternal blood, whence the plastic materials are derived, according to the view in question, could be sent to it. During the whole of this time, the embryo doubtless derives its nourishment from the albuminous matters with which it is surrounded in the ovum itself, in the same manner as the egg of the oviparous animal obtains the nutriment, necessary for its full development during incubation, from the matters surrounding it; in which case the supply of fresh plastic materials, derived from the maternal blood, is obviously impossible. But some time after it has attained the interior of the uterus, it is compelled to absorb appropriate nutriment from the mother; the minute quantity existing in the ovum, at this early period being totally insufficient for the development which the fœtus is destined to attain. In this respect, the human ovum differs from that of oviparous birds, which are hatched out of the body;—the latter containing nutriment enough for full fœtal evolution.

Since the time of Hippocrates, Aristotle and Galen, different anatomists and physiologists have asserted, that the umbilical vein is the *only channel* through which nutriment reaches the fœtus; or, in other words, that the whole of the nourishment which the fœtus receives is from the placenta, but the facts, to which allusion has already been made, are sufficient to overturn this hypothesis. It is impossible, that the placenta can have any agency before it is in existence. The umbilical vein cannot transmit fluids until it is *in esse.* Such an explanation of the process of nutrition could only hold good after the first periods, and then, as we shall see, it is sufficiently doubtful. Accordingly, we find that some of the most distinguished of modern physiologists, who have devoted their attention to embryology, have completely given up the notion of any placental agency during the first months, and they who have invoked it at all have usually done so as regards the after periods only.

On all this subject, however, we have the greatest diversity of views. Lobstein, for example, affirms, that the venous radicles of the rudimental placenta obtain nutritive fluids from the mother during the first days only, until the period when the arteries are formed; but after this all circulation between the uterus and placenta ceases, and the umbilical vesicle, the liquor amnii, and the jelly of the cord are the sole organs of nutrition. Meckel thinks the placenta is *never* the source of nutritive materials. He regards it—properly we think—as an organ for the revivification of the blood of the fœtus, analogous to the organ of respiration in the adult; whilst nutrition is, in his opinion, accomplished by the matter of the umbilical vesicle in the beginning, by the liquor amnii until mid-term, and by the jelly of the cord until the end. According to Beclard, nutrition is effected during the first weeks by the fluid of the umbilical vesicle; afterwards, by the liquor amnii, and the jelly of the cord; and, as soon as the ovum becomes villous, and developes the placenta, by that organ.

Adelon, again, is of opinion, that two sources of nutrition ought alone to be admitted;—the umbilical vesicle, which is the sole agent for nearly two months; and the placenta for the remainder of the period. Lastly, M. Velpeau, in the work before us, equally thinks, that the nutriment of the ovum is derived from different sources at different periods of gestation.

"It, (the embryo,) is at first but a vegetable, imbibing the surrounding humours. The villi of its circumference—true cellular *spongioles*—obtain nutritive principles in the tube and uterus, to maintain the development of the vesicles of the embryo; after which the embryo is nourished like the chick in ovo, or rather, like the plantule, which is at first altogether developed at the ex-

pense of principles inclosed in its cotyledons. It gradually exhausts the vitelline substance contained in the umbilical vesicle. The emulsive substance of the reticulated sac or of the allantoid pouch is also gradually absorbed. The end of the second month arrives. The vessels of the cord are formed. The placenta is unfolded, and is soon sufficient to keep up the evolution of the fœtus. By its contact with the organ of gestation, the spongy cake obtains from the uterus reparatory materials; works them up; and forms from them a fluid, more or less analogous to blood, and this fluid is absorbed by the radicles of the umbilical vein. In a word, the ovule, or the placenta obtains materials from the uterus for the formation of the fluids of the fœtus, as the liver, the kidney, the seminal gland, &c. obtain from their own vessels materials for the formation of bile, urine and the prolific liquor; and as trees and plants extract from the soil the principles of the numerous compounds they contain. I see nothing difficult of comprehension in all these acts. Moreover, the villosities of the chorion, which, to make use of an expression of M. Seiler, are at first but *suckers*, possessing a fungiform character from their extremity to the end, constitute an instrument of absorption for the whole period of fœtal life, and would of themselves suffice to overturn all the hypotheses, based on the pretended vascular continuity of the uterus with the placenta." p. 74.

We find, consequently, some of the most distinguished physiologists of the age denying—as it would seem that every one ought to deny—that the nutrition of the fœtus takes place solely by means of the blood sent by the mother to the fœtus. If we search into the evidence afforded us by transcendental anatomy, we find, that amidst the various singular monstrosities met with, there would appear to be but one thing absolutely necessary for fœtal development—an absorbing surface surrounded by a nutritive substance that can be absorbed. Head, heart—every thing, in short, except organic nervous system, vessels, and cellular tissue—may be wanting, and yet the fœtus will grow so as to attain its ordinary dimensions.

We have the most incontestable evidence, that a fœtus may be born alive, without umbilicus, umbilical cord, or any evidence of vascular connexion between it and the mother. In noticing the varieties met with in the umbilical cord, M. Velpeau refers to many such cases. Thomas Bartholin, during his travels in Italy, saw an individual, forty years old, who was born without anus, penis, or umbilicus; and M. Velpeau cites cases from Ruysch, Samson, Chatton, Rommel, Denys, Fatio, V. Geuns, Sue, Penchienati, Franzio, Desgranges, Kluyskens, Pinel, Mason, Osiander, Dietrich, Froriep, and Voisin, but as these cases militate against his views of embryotrophy, he attempts to diminish their force by affirming—

"That the observations which he has made, satisfy him, that all the fœtuses thus born had died in utero, in consequence of the destruction of the cord, or the closure of the umbilicus; or else that the umbilicus existed, but was hidden

or lost in the extroversion of the bladder, almost always remarked in those that had lived."

Passing by the strange deduction of M. Velpeau,—that his "observations" have satisfied him of the incorrectness of observations made by men, who have long since passed away,—long before he existed,—as well as the facts, that certain of the animal kingdom breed their young without placenta or umbilical cord, and that the fœtus, in extra-uterine pregnancies, has frequently no placenta,—the case given by Hoffmann, and cited by Dr. John Mason Good, of a fœtus born in full health and vigour, with the funis sphacelated, and divided into two parts,—and a case observed by Dr. Good himself, appear to us to be impregnable. The case in question occurred to Dr. Good in 1791. The labour was natural; the child, scarcely less than the ordinary size, was born alive; cried feebly, once or twice after birth, and died in about ten minutes. The organization, both internal and external, was imperfect in many parts. There was no sexual character whatever;—neither penis nor pudendum, nor any interior organ of generation. There was no anus or rectum; no funis; no umbilicus. The minutest investigation could not discover the least trace of any.

With the use of a little force, a small, shrivelled placenta, or rather the rudiment of a placenta, followed soon after the birth of the child, without a funis, or umbilical vessels of any kind, or any other appendage by which it appeared to have been attached to the child. In a quarter of an hour afterwards, a second living child was protruded into the vagina, and delivered with ease, being a perfect boy, attached to its placenta by a proper funis. The body of the first child was dissected in the presence of Dr. Drake, of Hadleigh, and of Mr. Anderson, of Sunbury, to both of whom Dr. Good appeals for the correctness of his statement.

Transcendental anatomy, then, instructs us, that placenta and umbilical cord are not *indispensable* to fœtal nutrition; and compels us to infer, with Meckel, one of the most eminent teachers of anatomy and physiology—in all their bearings—of modern times, that the human placenta may have no direct agency in embryotrophy. We are necessarily therefore driven to the conclusion, before laid down—that in order that a fœtus shall be produced in utero it is but necessary, that there shall be an absorbing surface surrounded by a nutritive substance that will admit of being absorbed. Now, the cutaneous envelope of the fœtus—monstrous or natural—is such a surface, and the liquor amnii such a fluid; whilst the matter of the umbilical vesicle, and the jelly of the cord, when these parts exist, and *possibly* some material derived through the placenta—after it exists—may lend their

aid. But the participation of the last organ is—to say the least—doubtful. Its function is probably to admit of the fœtal blood being *shown* to that circulating in the maternal vessels, so that some change may be effected in the former, which may better adapt it for serving as the pabulum, whence the secretions, from which the fœtal organs have to be elaborated, must be formed. We cannot, however, pursue this deeply interesting subject further.

The second and last section of the work comprises two chapters—the one on the *formation of the embryo*, the other on *the successive development of its different parts*. In neither do we find much on which to comment.

The appearance of the embryo, when it can be first detected, is of course a matter of observation, yet the evidence of different observers is most discordant. M. Velpeau does not attempt to say what is its primitive form, but his observations have satisfied him, that the spine is the fundamental part of the body; that it appears before any other organ; that it exists alone for an appreciable time; that its shape is not essentially different from what it is at other periods of intra-uterine life; that at twenty days and some days afterwards, it is not straight, nor is it larger in the middle; that the head and the neck form at least one-half its length; that its curvature is the nearer to a circle the less its development; and that the appearance of its circumference differs but little from what it presents afterwards—

"Whilst its anterior *contour* or its concavity merits the most serious attention by the changes which it experiences; on it the different organs being successively developed." p. 78.

In the desire for generalization, which has possessed the minds of many of the modern anatomists and physiologists—of Germany and France more especially—it has been attempted to show, that every human fœtus, at its earliest periods of development, is alike as regards its sexual organs, and that it has ultimately the characteristics of one or the other sex, according to circumstances often perhaps adventitious. This view has been suggested by the impracticability of distinguishing the sex, until a certain degree of development has been attained. For example, at the end of the fifth week, a small, cleft eminence is apparent, which is the rudiment of the scrotum or the vulva, according to the sex. At the sixth, a small black point is perceptible in front of the coccyx, which marks the anus, or the aperture common to the anus and genital organs. A little nearer the umbilicus, a conical tubercle is perceptible, connected at its inferior part. This forms the rudiment of clitoris or penis, according to the sex. About the seventh or eighth week, this tubercle appears to be surmounted

by a glans. At the eleventh or twelfth the perinæum forms, so as to separate the anus from the genital organs. At the fourteenth the sex is marked.

This striking similarity between the male and female organs has led M. Tiedemann to conclude:—that the female sex is the male, arrested at an inferior point of organization. According to him, every embryo is primitively female;—the cleft, above-mentioned, being the vulva; and the projecting tubercle the clitoris. To constitute the male sex, the cleft of the vulva is united to form a raphe; the labia majora when joined, form the scrotum; the nymphæ, the urethra; and the clitoris is converted into a penis. In support of this opinion, M. Tiedemann affirms, that the lowest species of animals are almost all females, and that all the young acephali and abortions, which he has examined, were so likewise.

On the other hand, Ackermann and Autenrieth assert, that the sexes are originally neuter; whilst M. Velpeau is disposed to believe, that they are all male! the infra-pubic prolongation existing in every embryo, although there may be neither labia majora, nor scrotum. p. 82.

But granting with any of these speculatists, that the embryo belongs to either one or the other sex, or is neutral, we must still remain at a loss regarding the influences that occasion the subsequent mutations; and it seems impossible not to admit, that, although an apparent sexual identity may exist amongst different embryos, there must be an impulse, seated somewhere, which gives occasion to the sex being ultimately male or female, as it causes the young being to resemble one or other parent in its outward form, or internal configuration; and, if our means of observation were adequate to the purpose, a distribution of arteries or nerves might probably be detected, which would satisfactorily account, *ab initio*, for the resulting sex. In the absence of such positive data, M. Geoffroy St. Hilaire has suggested that the difference may be owing to the distribution of the two branches of the spermatic artery. If these branches remain in approximation, and proceed in concert—the one to the testicle, the other to the epididymis—the individual is male; if, on the contrary, they separate—the one going to the ovary, the other to the corresponding cornu of the uterus, the individual is female. The degree of predominance of the cerebro-spinal system occasions the approximation or separation of these two arterial branches. This predominance being stronger in the male, the spermatic arteries are more feeble, and consequently in greater proximity; and *vice versa*. But all this, it need scarcely be said, is pure hypothesis.

Since writing the above, we have received Dr. GRANVILLE's splendid "Graphic Illustrations of Abortion, and the Diseases of Menstruation," the text of which bears almost wholly on the subject of embryology; the plates being mainly intended to elucidate a forthcoming publication by the same author. We can, therefore, at no time bring it before the attention of the profession better than at present.

Conception Dr. Granville properly considers to be accomplished in the ovarium. The evidence in favour of this view of the subject is indeed overwhelming; yet we have such eminent physiologists as MECKEL, and PREVOST and DUMAS doubting it. The ovulum, when it descends into the uterus—Dr. Granville asserts, on the authority of Professor BOER, of Königsberg—has an external membrane enveloping it, which Boer calls the "cortical membrane," and the author "*cortex* ovi." This membrane they describe as the one which, we have seen, is usually regarded as a uterine production, and denominated the *decidua reflexa*—the reflected caducous or deciduous membrane.

He consequently denies that there is any such thing as a decidua reflexa—an opinion which has been embraced, but upon other grounds, by many obstetrical inquirers, and amongst others, by Professor DEWEES, to whom we are pleased to see Dr. Granville offer the merited tribute, of being "as skilful and clear-sighted an obstetrical writer of the United States of America, as any that have appeared in Europe." p. v.

In two of the specimens of abortion, which are figured in the present work, there are strong evidences of the existence of this *cortex ovi*, which envelopes the shaggy chorion. This cortical membrane is destined to be absorbed during the first months of utero-gestation, so as to expose the next membrane to the contact of the decidua, with which a connexion takes place in the part where the placenta is to be formed.

"In that part, however, the cortex ovi is never altogether obliterated, but only made thinner; and in process of time it is converted into a mere pellicle or envelope, which not only serves to divide the filiform vessels of the chorion into groups or cotyledons in order to form the placenta, but also covers all over those cotyledons or groups of vessels. I have called this the *membrana propria*." p. iv.

Dr. Granville thinks it probable, that the decidua consists of two laminæ, "inasmuch as we always find it with one surface perfectly smooth, and the other rough."

The ovulum, on entering the womb, is about the size of a small

pea. The time at which it emerges from the Fallopian tube is not determined.

"It is said to have been detected in the uterine cavity on the eighth day, (Home.) Although it has lately been the fashion to doubt the accuracy of such a fact, there is reason to believe it to be correct, from the circumstance of M. Bauer's microscopic examination of the ovulum, and description of its structure corresponding with more recent discoveries, (Boer.") p. vii.

After the ovulum is lodged within the cavity of the womb, it continues to grow on its own "life-principle," until its connexion with the mother is effected, through the medium of the deciduous membrane, which becomes, at a more advanced period, as it were, a new and additional covering to the ovulum. The growth of the ovulum causes the *cortex* to burst, as happens with the receptacle or cortex of certain seeds, and with the outer shell of the ova of some oviparous animals.

On the cortex bursting, the fibrils of the chorion entwine themselves with the flocculi of the decidua, and thus the ovulum fastens itself to the uterus by one or more contiguous points. These fibrils are not all vessels. Some are only suckers; others are real vessels.

"The existence of any vessels among the fibrils of the chorion has been denied very recently upon the same ground, namely, microscopical observations. (Breschet and Raspail.) But there must be an evident mistake in such observations: for the actual progress of those filiform vessels, and their gradual swelling into large veins and arteries, at an advanced period of fœtation, have been noticed in examining various human ova of different ages. (Lobstein, Velpeau, Dutrochet, and myself.")

The chorion he affirms to be bifoliated, and he thinks, with Dutrochet, it is probably even trifoliated. Its vascularity is proved by its diseases, chiefly of an inflammatory character, ending in thickening of its texture, of which he gives several examples with graphic illustrations; and he affirms, that there is a preparation in the collection of Sir Charles Clarke, which shows the vessels of the chorion as evidently as if they had been injected.

In like manner, although normal anatomy may have failed in showing the amnion to be vascular, pathological anatomy, he asserts, has succeeded, and has shown that it may be a secreting membrane.

The amnion he considers to be a sac formed by the reflected layer of the epidermis of the embryo, and he quotes Velpeau and others in support of the opinion; but Velpeau, we have seen, although he once thought so, now disclaims the notion.

On the mooted question, whether the arteries or nerves appear

first, Dr. Granville accords with those who give precedence to the vascular system. "The nerves invariably appear after the arteries which they are intended to accompany." Yet the experiments of Home, and of Prevost and Dumas, lead to reverse conclusions. The same dissidence exists with regard to the precedence in formation of the blood-vessels. The blood is formed independently of the heart; the veins, according to the generality of physiologists, first appear; next the heart, and then the arteries. A distinguished Italian physiologist, however, (ROLANDO,) assigns the precedency to the arteries. Further experiments are demanded to settle these interesting, but intricate points of organogenia.

Of the umbilical, allantoid, and erythroid vesicles, he gives us nothing new, and nothing from personal observation.

On the interesting subject of utero-fœtal circulation, Dr. Granville is enthusiastically in favour of a utero-decidual circulation. He thinks the fact of the existence of vessels passing between the uterus and decidua unquestionable; but these he makes independent of the fœto-placental circulation. His view of the functions of the placenta are precisely those which we have given in the former part of this review.

"90. The circulation of the blood in the ovum is independent of that of the mother, (personal experiment (59) and all the more recent physiologists.) The embryo creates its own blood, and through it sustains its own existence. But its blood, like that of all other animals, whether during its intra or extra-uterine life, requires to undergo certain changes at every minute period of that life, and those changes it experiences through the influence of the blood of the mother. (Magendie, Mende, Pockels, Baer, Chaussier.)

"91. The function of the placenta, therefore, seems to be to facilitate, and in good truth to effect the necessary changes in question, (90.) The decidual vessels receive the arterial blood of the mother. This is spread over a very considerable surface of tubular structure, which being in its distribution, made to come in apposition with the infinite ramifications of the umbilical placental vessels at innumerable points, (like the inspired air distributed through the bronchial passages, is made to come in apposition with the myriads of vascular rami of the lungs;) the required changes in the blood of the fœtus are produced, just as the changes called for in the pulmonic blood are produced by the peculiar arrangement of that part of the animal economy. When the arterial blood of the mother has produced the desired effect on that of the fœtus, it is returned by decidual veins to the uterine sinuses applied, like absorbing mouths, to the surface of the decidua, when it enters into the general venous system of the mother. (Magendie; personal observations.") p. xviii.

On the subject of the nutrition of the fœtus, Dr. Granville is extremely obscure. He does not indeed know how to decide. The

above extract would show, that he considers the function of the placenta to be that of a mere respiratory apparatus; but he quotes the opinion of Mr. Mayo, that—

"It is not difficult to believe, that nourishment is directly imbibed from the vessels of the mother by the circulating fluid of the embryo, through the fine intervening membranes."

This, however, could only apply to the ovulum after it has contracted an adhesion with the uterus. He is disposed, too, to consider it probable, with Dr. Hunter, that the fœtus may be nourished by thousands of small lymphatic vessels, which absorb nourishment from the blood of the mother, and carry it along the navel-string. He adduces many cogent reasons why the fœtus should not be nourished by "a regular deglutition and digestion" of the amnionic fluid, along with others that are not as cogent,—as where he asserts, that the liquor amnii is "mere water with a vestige only of albumen, the only nutritive quality in it."

The view that ascribes fœtal nutrition to cutaneous absorption of the liquor amnii, and which we have attempted to show, is the most tenable of all, and unites the greatest amount of evidence in its favour, is thus cursorily passed over.

"Some have thought that the amnionic fluid was absorbed through the pores of the skin, (Osiander;) others through the mammæ of the fœtus, (Oken.) That the vesicula intestinalis, (umbilicalis,) contributes to the growth of the embryo is a great deal more probable, (Blumenbach, Soemmering, Lobstein, Joerg.) It is also not improbable that the gelatine of Wharton contributes to that object, (Lobstein.) But these are all conjectures, for the probability or improbability of which as many arguments and real facts have been alleged on equally unquestionable authority. 'Ce sujet,' observes Magendie, 'a souvent exercé l'imagination des physiologistes, sans aucun profit réel pour la science.'" p. xix.

In this vague manner he leaves this interesting subject. No one can presume to say, from the perusal of his observations, what he considers to be the main agents of embryonic and fœtal nutrition.

These are the principal topics touched upon in the *text* of Dr. Granville's publication, or in what he calls the *Prolegomena;* the remainder of the letter press, constituting what he regards as the main body of the work, being devoted to an explanation of the plates. In this part of the work he has indulged in the extreme affectation of classifying his specimens of abortion, as if they were fixed and invariable products of animated nature. Thus, we have—as specimens of very early miscarriages—"Fig. 1. *Ovulum bigeminum lanuginosum.*" "Fig. 2. *Ovulum semi-lanuginosum:*"—as specimens of mis-

carriages between two and three months—"Fig. 10. *Ovum pyriforme externe opacum.*" "Fig. 12. *Ovum opacum plethoricum:*"—amongst those of miscarriage between the third and fourth month—"Fig. 18. *Ovum coriaceum, cum hydrope funis et placentâ hydaticâ.*" "Fig. 19. *Ovum cum placentâ, nec vasculare, nec plenè cotyledonicâ, sed filiforme. Amnion morbosum.*" There is, indeed, about the whole work—beautiful and accurate as are its graphic illustrations—a sufficient appearance of the author's self-satisfaction, and occasionally too much evidence of something closely approximating to *Charlatanisme.*

At the end of his prefatory advertisement, he observes—

"I shall conclude by remarking, that the plates are intended to illustrate a work "on Abortion and the Diseases incidental to Menstruation," which I have been preparing for several years, and a prospectus of the contents of which will be found at the end of the present volume. That work will appear, Deo favente, in the course of the present year; but for the convenience of such persons as may not feel inclined to purchase it, the collection of plates has been purposely so arranged, as to be published with a corresponding text, in a separate form, and independently of the forthcoming volume."

R. D.

ART. XIII. *Illustrations of the Elementary Forms of Disease.* By ROBERT CARSWELL, M. D. Professor of Pathological Anatomy in the University of London, &c. London, 1833. Parts 1, 2, 3.

THE labours of the pathological anatomists for the last twenty years have been developing gradually the different forms of lesion to which the various textures of the body are liable, under the influence of morbid action; while the progressive state of physiology and chemistry has contributed largely to a *correct* understanding of their vital and physical characters, and suggested an accurate and judicious system of therapeutics. Aided by the efforts of the immortal BICHAT, the pathologist is now enabled to systematize and prove the identity of lesions, which were formerly regarded as dissimilar in anatomical and chemical characters. Of the recent contributions to pathology, none should claim a greater meed of praise than that of Mr. Carswell, on account of the perspicuity and clearness of its descriptions; the soundness of its views; the beauty of its illustrations, and its simple, yet accurate classification. We shall endeavour, as the work is costly, and consequently must have a limited circulation, to present

our readers with a faithful analysis of the first, second, and third fasciculi, believing that he would prefer making his own strictures upon such views as conflict with the prominent authorities on the morbid degenerations of which they treat. The different opinions advanced by pathologists upon the primary state of tuberculous matter, have induced our author to enlarge his definition of it, so as to embrace many of the apparently adverse observations of equally reputable investigators; believing, as is certainly evident, that this diversity of opinion has, in many instances, arisen from the stage in which the examination has been conducted; thus ANDRAL contends that tubercle at its origin is an opaque, friable, rounded body, of a yellowish-white colour, and without traces of organization or texture; while LAENNEC does not consider this to be the first stage, but that this is in every instance preceded by a grayish, semitransparent granule. On the other hand, CRUVEILHIER infers from his observations, that the hard, granular body is always a consequence of a puriform fluid; and his views are sustained by M. TROUSSEAU and LA BLANC in their examinations of the lungs of horses; while Dr. BARON and M. DUPUY suppose that it commences as a transparent vesicle or hydatid. Tuberculous matter, as defined by Mr. C. is a pale yellow or yellowish-gray, opaque, unorganized substance, the form, consistence, and composition of which, vary with the nature of the part in which it is formed, and the period at which it is examined. Considering tubercle as the product of the perspiratory secretion, Andral contends that it may be located in every part of the body, but is most usually found in the cellular tissue. Dr. Carswell, however, contends, that by far the most frequent development of tubercle takes place in the mucous tissue, and that whenever it is found in an organ provided with a mucous membrane, it will have its seat upon that membrane, thus the mucous system of the respiratory, digestive, biliary, urinary, and generative organs is much oftener the situation of tubercle than any other texture which enters into their composition. Our author's experience is directly adverse to that of Andral; for although the latter does not deny that tuberculous matter is sometimes found on the free surface of the mucous membrane, yet he asserts this to be extremely rare, and that he would be led to believe, that in by far the majority of instances, when the mucous membrane is involved, the primary location of the tubercle is in the sub-mucous cellular membrane, and by its gradual increase encroaches upon, and ultimately implicates it.

Tuberculous matter is frequently formed and diffused over the free

carriages between two and three months—"Fig. 10. *Ovum pyriforme externe opacum.*" "Fig. 12. *Ovum opacum plethoricum.*"—amongst those of miscarriage between the third and fourth month—"Fig. 18. *Ovum coriaceum, cum hydrope funis et placentâ hydaticâ.*" "Fig. 19. *Ovum cum placentâ, nec vasculare, nec plenè cotyledonicâ, sed filiforme. Amnion morbosum.*" There is, indeed, about the whole work—beautiful and accurate as are its graphic illustrations—a sufficient appearance of the author's self-satisfaction, and occasionally too much evidence of something closely approximating to *Charlatanisme.*

At the end of his prefatory advertisement, he observes—

"I shall conclude by remarking, that the plates are intended to illustrate a work "on Abortion and the Diseases incidental to Menstruation," which I have been preparing for several years, and a prospectus of the contents of which will be found at the end of the present volume. That work will appear, Deo favente, in the course of the present year; but for the convenience of such persons as may not feel inclined to purchase it, the collection of plates has been purposely so arranged, as to be published with a corresponding text, in a separate form, and independently of the forthcoming volume."

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or secreting surface of the serous membranes in the cellular texture, and in the blood, and not unfrequently accumulates in the lacteals and lymphatic vessels. The fact of tuberculous matter being absorbed by the lacteals, will be objected to by many physiologists who considered the office of the lacteal vessels to be exclusively the taking up and converting into chyle the nutritive particles of the chymous mass; if, however, the statement of Dr. C. that tuberculous matter is found in the lacteal vessels be correct, we must consider it as an illustration of his foregoing statement, and view it as a production of the lining membrane of the vessel itself. The cerebrum and cerebellum are sometimes the seats of this morbid product.

Admitting that tubercle is developed in almost every texture, it is evident that its form or external configuration must vary according to its location, and thus the rounded form considered by some pathologists as characteristic of this production, is purely accidental, and is ascribable entirely to the physical constitution of the texture in which it is located. Thus, from the homogeneous nature of the brain, and the equal resistance which is opposed to the accumulation of tuberculous matter at every point, it is compelled to assume a rounded form; in the cavity of the air-cells it forms a globular tumour; in the bronchi a tubular or cylindrical form; while in the biliary system it has a racemiform arrangement, from its being contained in the ducts and their dilated bulbous extremities. On the surface of serous membranes it is either globular or lamellated; in the infundibula, pelvis, and ureters of the kidneys, it is moulded into the form of each part, and sometimes it becomes infiltrated, and does not assume a definite form.

We shall refer the reader to the following remarks upon the consistence and colour of tuberculous matter, as they embrace the merits of the controversy between pathologists in relation to what ought to be considered the strict definition of tubercle and its primary state.

"Tuberculous matter does not acquire its maximum of consistence until an indefinite period after its formation. It is frequently found in its primitive state in the bronchi, air-cells, biliary ducts, and their dilated extremities, in the cavity of the uterus and Fallopian tubes, &c. resembling a mixture of soft cheese and water, both in consistence and colour; but when much resistance is offered to its accumulation, as in the lymphatic glands, and even sometimes in the air-cells of a whole lobule, it may feel as firm as liver or pancreas. These extreme degrees of consistence of tuberculous matter depend not only on the resistance which the tissues of these and other parts oppose to its accumulation, but also on the removal of its watery part some time after it has been deposited. Hence it follows, that tuberculous matter may, when first perceived, be either very

soft, or remarkably firm. In the first case it is pultaceous, and feels somewhat granular when rubbed between the fingers; in the second friable; and in both it is of a pale-yellow colour, and opaque."

"The gray semitransparent substance already alluded to, by no means necessarily precedes the formation of the pale-yellow or opaque tuberculous matter; it is, indeed, observed in a few only of the many organs in which the latter is found. Thus, it is never seen in the cavity of the uterus or Fallopian tubes; in the ureters, pelvis, or infundibula of the kidneys; in the mucous follicles of the intestines; in the lacteals or lymphatics; in the biliary ducts; nor do I recollect to have seen it in the cerebral substance. I have never met with it in the bronchi, unless in some of their most minute or terminal branches. On the contrary, the semitransparent substance is frequently seen in the air-cells, and on the free surface of serous membranes, particularly the peritoneum; and in both it is certainly sometimes observed to precede the formation of opaque, tuberculous matter; because, first, a number of cells of the same lobule are seen filled with the former, whilst the remaining cells contain the latter substance; secondly, because on the peritoneum the gray, semitransparent substance is generally more abundant than the pale-yellow, opaque matter; and thirdly, because a small nucleus of the latter is frequently enclosed in a considerable quantity of the former. The following is the explanation which I would offer of these exceptional conditions to the regular and ordinary formation of the tuberculous matter. But, first of all, it is necessary to remark, that the formation and manifestation of this matter as a morbid product cannot take place unless the fluid from which it is separated—the blood—has been previously modified. This important fact being admitted for the present, it is obvious that a healthy secreting surface may separate from the blood not only the materials of its own peculiar secretion, but also those of tuberculous matter. Such is, indeed, what takes place in the air-cells. The mucous secretion of their lining membrane accumulates where it is formed; but it is not pure mucous, it contains a quantity of tuberculous matter mixed up with it, which after a certain time is separated, and generally appears in the form of a dull, yellow, opaque point, occupying the centre of the gray, semitransparent, and sometimes inspissated mucus. This process of separation of tuberculous matter from secreted fluids is strikingly exemplified in tubercular peritonitis. When we examine the peritoneum thus affected, the three following stages of the process are frequently extremely well-marked; first, on one portion of this membrane there is seen a quantity of recently-secreted, coagulable lymph; secondly, on another we find the same plastic semitransparent substance, partly organized, and including within it, or surrounding a globular mass of tuberculous matter; and lastly, on another part the coagulable lymph is found converted into a vascular or pale cellular tissue, covered by an accidental serous membrane, beneath which, and external to the peritoneal or original secreting surface, the tuberculous matter is seated, having the form of a round, granular eminence, resembling in colour and consistence pale, firm cheese."

"In this, as well as in the preceding case, we cannot but perceive that the formation of tuberculous matter originates in a process similar to that of secretion; that its separation from the blood may be accompanied with that of natu-

ral, and also other morbid secretions; and hence the reason why its physical characters are sometimes observed, particularly in the first stage of its formation."

We discover by the above remarks, that our author does not conceive firmness to be an essential attribute of tuberculous matter, and that even when it does exist in this form, it is not unfrequently after some considerable time, and owes its consistence to the removal of the fluid part of the original deposit. Neither does he believe with Laennec, that in every instance the primary stage is the gray, semi-transparent granule. To explain the deposit of this morbid production, a heavy draught is made upon the humoral pathology, for while the blood is presumed to be modified in its qualities, the secernent apparatus is in a healthy condition, performing its usual function, elaborating from the blood, besides its healthy secretion, a fluid, which, when deposited, proves to be the morbid production in question. As repugnant as this appears to be to the almost universally prevailing doctrine of solidism, yet we cannot but admit, that it explains satisfactorily the deposition of this matter in textures essentially different in vital, chemical, and physical attributes, and the several stages through which it passes in its gradual development.

When anatomically and chemically examined this matter presents variety in its composition. In the cheese-like substance alluded to above, there is not the slightest trace of organization, and it may be said of tuberculous matter in general, that—

"It has, in fact, no definite internal arrangement, and the changes of bulk, consistence and colour which it undergoes, are entirely dependent on the influence of external agents."

Tested by chemical agents it presents different results in the different stages of its deposit and even in different organs. In man it is principally composed of albumen, with various proportions of gelatine and fibrine, with a portion of the earthy salts, principally phosphate of lime; but the most important fact connected with the chemical composition of tubercle is, that either from the nature of its constituent parts, the mode in which they are combined, or the condition in which they are placed, they are not susceptible of organization, and consequently give rise to a morbid compound, capable of undergoing no change that is not induced in it by the influence of external agents. Thus, when softening of a tubercle takes place it cannot be accomplished by any change which is effected in the morbid product itself: from this it would appear that the opinion of Laennec, that the softening commences in the centre of the mass, is somewhat

doubtful; in this Andral unites, for in examining the mode by which ripening is accomplished he distinctly disavows any agency of the tuberculous product itself. In consequence of the texture in which it is located, the deposit not unfrequently remains fluid from its origin, but when it becomes firm the process of softening is attributable to each particle of the tuberculous matter acting like a foreign body on the tissues with which it is in contact, produces in each corresponding point of these tissues a secretion of pus which mechanically effects the division of the tubercle into clots, and acts here exactly similar to a foreign body lodged in any part of the living system. This separation of the particles of the mass into clots, and ultimately reduction to a softened mass is the result of a process of irritation not peculiar to the part, but analogous with the suppurative action established by all textures to relieve themselves of some foreign irritant. Softening commences then most frequently upon the circumference which is usually recognised as the foreign mass. The existence of encysted tubercle is strongly doubted by Dr. C. who thinks that the investing membrane or cyst is in every instance a portion of the texture in which the matter is found; when located in the lungs he has demonstrated it to be the distended walls of the air-cells in the biliary system—the dilated bulbous extremity of the hepatic radicle.

The removal and ultimate cure of tuberculous deposits is considered of frequent occurrence, and in many instances without ulceration or suppuration: in scrofulous enlargements of the lymphatic glands, as for instance, in tabes mesenterica, there has been a removal of the tuberculous matter, and the patient relieved entirely of the existing symptoms; and upon examination after death, from other causes, the mesenteric glands have been found to contain a chalky substance, the remains of previously existing tuberculation. In this case the gelatine and fibrine have been removed by the absorbents; leaving behind the calcareous constituent; a mode of reparation of not very rare occurrence in the lungs and other organs. Again, the entire contents of these glands have been evacuated, and converted into a fibrous tissue. The same appearances indicating the removal of the serous and albuminous parts of the tuberculous matter, and the condensation of its earthy salts, have frequently been observed in the lungs of persons in whom the previous existence of tubercular phthisis could not be doubted: but the usual termination of tuberculation of the lung, is effected by the expectoration of the matter after it has become fluid.

We now pass on to the heterologous formations, which although

they constitute one of the most important and difficult subjects of anatomico-pathological investigation, and have for a long time occupied the attention of the pathologist, are yet involved in much obscurity, particularly those which are termed malignant—as cancer, medullary sarcoma, and fungus hæmatodes. This imperfect state of our knowledge is attributable, in the estimation of our author, to the following circumstances, viz.

"The almost exclusive study of them for a long period as they occur in the external parts of the body in the form of tumours, and the partial or inaccurate observation of their primary forms, of the subsequent changes which take place in them, and of the modifications which they undergo in these and other respects, in the different tissues and organs of the body."

Much of the difficulty in classifying these morbid productions has arisen from the reckless and indiscriminate mode of observation pursued by pathologists; for instead of examining the primary state of these formations with the successive development of their several stages, they have been content to describe each condition as a new and distinct morbid lesion, and thus established as separate degenerations the several stages in the development of one and the same pathological condition of the organ; and have given rise to the multitude of names which at present burden this interesting branch of pathological investigation. The essential character of the heterologous formations consists in the presence of some substance, either solid or fluid, which does not enter into the healthy composition of the body; presenting, however, striking differences in one or more of its characters, which have given rise to the various forms of disease, and described from their resemblance to the healthy structures of the body and other substances—as scirrhus, medullary sarcoma, fungus hæmatodes, melanosis, tubercle, pus and calculus; terms, which we have stated above, should convey no specific difference in the morbid conditions to which they are applied, and indeed Mr. Carswell remarks that the same disease has received different appellatives in consequence of the dissimilarity which is present at different stages of its development. It is evident then that the number of heterologous formations can only be determined by ascertaining the primary forms in which this substance is found, and the subsequent changes to which it is subject in the different textures and organs of the body. After a careful and accurate investigation of the primitive forms of those deposits which have as their essential characteristic some principle which does not enter into the organization of the healthy animal, and the types which they assume in their progress to full deve-

lopment, our author has determined to class them under the terms carcinoma, melanoma, pyonoma, tynoma, lithoma. Under the division carcinoma we have presented for examination common vascular or organized sarcoma; pancreatic, mammary and medullary sarcoma; and fungus hæmatodes; although these diseases are generally presumed to differ essentially in their nature, yet they warrant the classification adopted, by their presenting in their formation certain peculiarities common to all of them; by their gradual destruction or transformation of the textures in which they are located; by a tendency to affect several organs in the body; and lastly, by their possessing the same reproductive character. These carcinomatous formations differ somewhat from each other, and present us with two divisions or classes; in one the deposit manifests no disposition to become organized, its form and arrangement depend entirely upon external circumstances: in the other a tendency to organization is evinced, and in itself possesses properties, by means of which its subsequent development is accomplished, without reference to the nutritive efforts of the organ in which it is located. The first of these divisions we term scirrhoma; the second, cephaloma. The varieties of scirrhoma are established by the quantity of the foreign deposit, and its mode of arrangement; thus when it is distributed in numerous points of a hard, gray, semitransparent substance, intersected by a dull white or pale straw-coloured fibrous or condensed cellular tissue, it is styled scirrhus; if it assumes a lobulated appearance, so as to resemble a section of the pancreas, it is termed by Mr. Abernethy pancreatic sarcoma; if, on the other hand, it is uniformly diffused through the texture of the organ, so that a section of it resembles a slice of pork, it is called by the French, tissu lardacé; or lastly, when it resembles firm jelly, and is collected into masses of greater or less bulk in a multitude of cells, it is termed by Laennec, matiére colloid, cancer gélatiniforme or aréolaire, by Cruveilhier.

The varieties of cephaloma are determined by the appearances which the heterologous deposit assumes in different organs, or at different stages of its development. Mr. Abernethy termed it common vascular or organized sarcoma when it resembled coagulable lymph, or fibrine deprived of the red colouring matter of the blood, of a uniform, fibriform or lobuliform arrangement, with a certain degree of transparency and vascularity: on the contrary, if it was spread equally throughout a texture, and presented the appearance of a section of the mammary gland, he called it mammary sarcoma; or when it partook of the external characters of brain, he considered it to be me-

dullary sarcoma; Laennec styled the last form matiére cérébriforme, or encephaloïde; Burns, spongoid inflammation; Dr. Monro, the milk-like tumour; the soft cancer by others; the pulpy testicle of Dr Baillie. In the last species the coats of the vessels which supply the tumour are so extremely delicate that they rupture from congestions, and blood mixed with the brain-like substance is effused; this accidental circumstance, together with its protrusion through the integuments, has applied to it the appellation of fungus hæmatodes, or fungoid disease. Our author remarks, that although the essential difference between these species consists in the former having little tendency to become organized, and the latter a greater or less disposition to assume this state; yet, it is extremely difficult to draw an accurate line of distinction between them, because the heterologous deposit when first formed does not display any signs by which we may determine whether it will or will not become organized.

Examples may be adduced to show that scirrhus, medullary sarcoma, and fungus hæmatodes, have been developed from the same morbid state, and not unfrequently two species present themselves in the same organ of one individual.

Let it not be inferred from these remarks that it is unimportant to distinguish one species or variety of this disease from another; since one will readily run into another still more inveterate; for the curability of the disease often depends upon the period at which we apply our remedies, and inasmuch as experience has demonstrated that all the forms of carcinoma are not equally curable; we should be the more anxious to discover accurately the state of the morbid product, and adopt in time a judicious and satisfactory remedial system. Again, the knowledge of the species will determine the rapidity of its development and its most probable result; which, when associated with the time occupied in its primary development, will enable the physician to prognosticate accurately the eventual termination.

It is evident from the above, that it is impossible to give a precise definition of carcinoma; but the following, given by Mr. Carswell, appears to approach as near the truth as is possible.

"Carcinoma consists in the formation or deposition of a peculiar substance, which presents great variety of consistence, form, and colour; frequently assumes a definite arrangement, and possesses a vascular organization of its own; gives rise to the gradual destruction or transformation of the tissues in which it is situated; affects successively or simultaneously a greater or less number of organs, or has a remarkable reproductive tendency."

Seat and origin of carcinoma.—In order that we may ascertain

the manner in which carcinoma is formed, it is necessary that we should examine it in its forming stage, before it has produced destruction of the texture in which it is deposited. Examined in this way, it appears manifest to our author that it is either the production of nutrition or of secretion. When it results from the nutritive efforts of the system it is eliminated from the blood, in the same manner that any of the healthy constituents are separated, and thus enters into the molecular structure of the organ. On the other hand, when its deposition is effected by secretion it is found upon the free surfaces, as are the natural secretions upon the serous surfaces: independent of these locations, and as an inference from the manner in which it is formed, we are authorized to state that the carcinomatous constituent is also found in the blood: indeed, the observations of Mr. C. warrant the presumption, that in the great majority of those cases which terminate fatally from this disease, the foreign substance is to be found after death blocking up some of the larger venous trunks.

The liver and stomach will exemplify the mode in which carcinoma is primarily deposited in the molecular structure of organs. Thus, if we make a section of a liver containing round or irregular masses of scirrhoma or cephaloma, we shall be able to determine the mode by which they are developed: the first evidence of the disease is a change of colour in one or more *acini*. The red or yellow colour disappears, and is succeeded by a pale milk-like or straw colour, with increase of their consistence.

During this change of colour, the form and bulk of the acini remain unaltered: now, it is evident that the acini could not retain their original form and bulk if the foreign substance was deposited in the already existing structure; for if any additional substance is added to the healthy acinus, the first manifestation of change would be the alteration of its form or increase in its bulk: but as this is not the case, but on the contrary, the evidences primarily being an alteration in colour and consistence of the acinus, we must infer that it is accomplished in a manner analogous to that in which the nutritive function is carried on. If we continue the investigation, we discover this alteration extended to neighbouring acini, and arranging themselves into groups of various sizes, from a millet-seed to a cherry, preserving at the same time the essential characteristics of the hepatic structure—the form, bulk, and arrangement of the acini; until ultimately the bulk of the tumours increase so as to resemble a uniform, lardaceous mass, or some other form of the carcinomatous deposition.

The formation of carcinoma in the stomach is very similar to the process pursued in its development in the liver. The muscular coats and intermuscular cellular texture favour the examination in consequence of their colour and fibrous arrangement: the first manifestation is the paleness of the muscular fibre and its increase in consistence; here, as in the liver, the bulk is not altered in the least degree; neither is there a change in its form and distribution. The intermuscular cellular tissue acquires a more firm and consistent character; and as the disease progresses the bulk becomes greater, the structure of the organ assumes a fibriform arrangement, and becomes hard and transparent, presenting us with the characteristics of scirrhus. At a still more advanced stage of disease, the nutritive process of transformation is no longer distinguishable; the muscular and cellular tissues being completely converted into a homogeneous mass; which is eventually softened down, or assumes the mammary, medullary, or hæmatoid characters of carcinoma.

Our author conceives that the formation of carcinoma on serous surfaces, corroborates in a striking manner the correctness of his views in relation to its development; this mode of production he terms secretion; and although the difference between it and that which we have above called nutrition is merely nominal, yet we may contemplate it here as the result of the usual secreting process of the organ, without the slightest alteration in its texture: it is therefore a most conclusive evidence that an alteration in texture is not essential to the development of this disease, but that it owes its origin to other causes, and must be referred to some peculiar condition of the great *pabulum vitæ*.

Mr. Carswell remarks that the trite but important observation, that hundreds of individuals are affected with inflammation, without this local disease being followed by any other than its usual effects, places in the clearest light the necessity of a previously existing modification of the economy, as the immediate and essential condition of the speciality of the heterologous formations when they occur in conjunction with inflammation. We illustrate this by the following case, which is not an unfrequent occurrence. An individual has a scirrhomatous or cephalomatous tumour on the external surface of the body. He has an attack of pneumonia, of which he dies in the course of a few days: on examining the lungs or pleura, instead of finding an effusion of serum, coagulable lymph, or pus—the usual results of inflammation—we discover that the lung is converted into a solid mass resembling a section of fresh pork; in fact, it is in a scirrhus state.

We cannot explain this upon the ground that the matter of the external tumour is absorbed, and thereby contaminated the blood, and ultimately deposited in the lung structure; for admitting this to be true, the difficulty is not yet solved, for how shall we explain the production of the first tumour? Again, such depositions occur after inflammation in individuals who have had no previous carcinomatous tumour, we must therefore pass beyond the local disease, viewing it merely as the expression of a condition of the system by which carcinoma is produced, and from which the disease originates.

We have stated above, that the heterologous substance accumulates in the blood, and now refer to it as an important fact, illustrating in a great degree the formation of carcinoma in the molecular structure of organs, or on the free surfaces of serous membranes. That this substance does accumulate in the blood, is apparent from its presence in the vessels which ramify in carcinomatous tumours, or in their immediate vicinity; from its being traced in the vessels of an organ in which this substance is found from their trunks to their capillary terminations; from its being detected in vessels having no direct communication with an affected organ, as, for instance, in a small portion of the vena portæ; and lastly, from its presence in the blood effused into the cellular tissue, and on the surface of organs.

Carcinomatous substance has not been detected in the arteries, but always in the venous trunks and their capillary ramifications; the contractility of the artery constantly urges on the circulating fluid, and thereby prevents the accumulation of any substance within its walls. The characters of carcinoma occurring in the veins, vary considerably; it is either the lardaceous, the mammary, medullary, or hæmatoid form, isolated into masses so conspicuous, that we can readily distinguish one from the other; at another time it takes the form of the vessel, and is merely in contact with it, and sometimes we have it connected to the coats of the vessel by a thin layer of colourless fibrine. From what has been said of the origin and subsequent development of carcinoma, it is evident that it must be ascribed to a peculiar condition of the blood, from which the morbid constituent is separated during the acts of nutrition or secretion, and not to any state or condition of the texture or organ in which it is formed; but we cannot omit a brief notice of the explanation of the formation of this substance afforded by Dr. Hodgkin in the Medico-Chirurgical Transactions, in which he labours to prove, that the presence of a serous membrane of a cyst-like character is essentially

necessary for the production of carcinoma. To this view Mr. Carswell objects most decidedly, remarking, that he does not deny but that the heterologous deposits are sometimes provided with serous cysts, but that it is far from being the prevailing provision, and that when it does occur, it is to be explained by the fact, that the deposit is not on the free surface of the serous membrane, but in the subserous cellular tissue, external to the cyst, and carrying the serous surface before it; this view, he contends, is correct in all the instances cited by Dr. Hodgkin. The existence of cysts is never observed in the liver, coats of the stomach, lungs, kidneys, brain, lymphatic glands, spleen, and blood, and whenever we find them in the ovaries, testes, or mammæ, they must be esteemed a mere coïncidence, or as a consequence of the disease, and not as a cause or necessary condition of it.

The physical characters of carcinoma are contemplated under the form, bulk, colour, and consistence, which it assumes in the various textures and organs of the animal body. The form of carcinoma varies greatly, and is in some degree dependent upon the mode in which it is deposited; when it is formed by the nutritive powers of the organ, it presents us in its early stage the form of the healthy structure of the organ; thus, in the acini of the liver we have the heterologous deposit subscribing accurately to the external contour of the sound or healthy granule of the organ; in the stomach a similar state of the carcinomatous formation takes place; the muscular, cellular and mucous tissues of the organ determine the primary form. But in the forming stage in the brain, lymphatic glands, and testes, the original condition of the organ is not apparent, in consequence of the heterologous mass assimilating in colour the healthy structure of these organs. As the disease progresses, the form and arrangement varies, and ultimately assumes one of these conditions—the tuberiform, stratiform, or ramiform. The tuberiform arrangement is by far the most frequent condition of carcinoma. This arrangement arises frequently in the interior of organs, from the uniform density of the organ compelling the deposit to take the globular form; from this cause we find that it is by far the most frequent occurrence in the liver. On the secreting surfaces of serous membranes the globular is soon converted into the pyriform node, either in consequence of its mode of attachment, or of less resistance being opposed to its growth in one direction. When it is accumulated in separate portions of the cellular tissue, and included within a capsule, it has a lobulated appearance, and in the sub-mucous tissue it exhibits the

cauliflower or mulberry form. The stratiform deposit is more frequently found in the sub-serous cellular membrane, located in layers of various size, and presenting no definite arrangement; it is most frequently found in their circular patches, from the size of a pin's head to an inch in diameter. This form of carcinoma is seldom recognised without the presence of disease in some important organ. The third or ramiform arrangement of carcinomatous matter is dependent upon its location in the veins; it is frequently discovered in the emulgent vein and its ramifications, so that a section of the kidney presents this matter escaping by pressure from the injured vessels. It is also met with in the minute and larger venous vessels of the stomach, in the vena portæ, lacteals, and lymphatic glands.

The quantity of the morbid product deposited either in the structure, or on the free surfaces of organs, varies greatly; but as a general rule, we may say it is deposited with far more freedom upon the free surface than in the structure of an organ. In the liver we have it from the size of a millet-seed to an orange; in the lungs, testes, and mamma, in consequence of the yielding character of their structure, it may accumulate to an immense size; while in the intermuscular and subcutaneous cellular membrane it is freely diffused throughout its whole extent. Mr. Carswell remarks, that pressure will retard the development of carcinoma, and if it were possible to exert constant pressure, its increase might be restrained, and the disease so circumscribed as to render it less liable to terminate fatally; but it should also be borne in mind, that while pressure exerts considerable influence upon its development, yet when it is afterwards removed, the disease progresses with astonishing rapidity, and speedily hurries its victim to the grave.

The colour of carcinoma is of great importance to the pathologist, inasmuch as it is entirely different from that of any other of the heterologous formations, and will therefore indicate with unerring precision the presence of this deposit in any texture or organ; it is most generally white, with a shade of gray or blue, sometimes it is yellowish, or brown, or red, in consequence of the colour of the organ in which it is situated, or from the presence of blood, bile, pus, or some other accidental circumstance.

"But the principal modifications of colour of carcinoma are seen in the several varieties of both species of the disease; these varieties, as I have already stated, resembling more or less in colour that of the organ or tissue, whence have been derived their respective appellations, as that of cartilage, of the pan-

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creas, of fresh or boiled pork, of coagulated albumen or fibrine, of the mammary glands, of the cerebral substance, or a mixture of the latter and blood."

It is evident that our author considers the varieties of carcinoma to be dependent upon the state or structure of the organ in which they repose, and not upon any essential or specific difference in the matter deposited, for one of his fundamental positions appears to be, that the blood must first undergo a change in its condition, and contain the essential principle of this morbid mass; during the process of nutrition and secretion, it gives up this principle, which, from its contiguity to highly vascular textures, becomes the recipient of arterial ramifications from the adjacent vessels, and ultimately presents us a more or less perfect organization; if, on the other hand, its deposition is effected in a less vascular or imperfectly organized tissue, it manifests less disposition to become organized.

The consistence of this substance has been esteemed one of its most important physical characteristics; when it is of greater consistence or firmness than the organ in which it is embedded, it has been termed scirrhus, and regarded as in its incipient or forming state, and on the contrary when it has less firmness, it is said to be the result of the softening process; that is, it has advanced another stage in the progress of the disease; these views are shown by our author to be erroneous, since the carcinomatous matter may in its first stage be either "as hard as cartilage, soft as brain, or fluid as cream." The consistence depends on the nature of the organ in which it is deposited; the elementary composition of the depo-it, and the changes which take place either in the deposit itself or in the tissue with which it is in contact. Accurate investigations of the chemical characters of carcinoma are not easily obtained, in consequence of the difficulty of insulating the matter from the texture of the organ around it; but that furnished by Lobstein in his "Traité d'Anatomie Pathologique" is assumed by our author as the most correct; from which it appears that in seventy-two grains of scirrhous breast were found—albumen, two grains; gelatine, twenty; fibrine, twenty; fluid fatty matter, ten; water, twenty grains: nearly the proportion of the above elements were found in seventy grains of scirrhous uterus. It is just to observe that the chemical composition of cephaloma is not uniform in all its stages; thus in its crude state it contained a greater quantity of gelatine than albumen; while in its stage of softening it contains a greater quantity of albumen than gelatine. A carcinomatous tumour anatomically examined presents four elements; carcinomatous matter, cellular, fibrous and serous tissues, and blood-vessels. The carcinomatous

matter constitutes by far the greatest bulk of the tumour, and is either uniform, granular, radiated or lobular in its arrangement. The cellular tissue is mostly small in quantity, and intersects the tumour in various directions, encloses the matter, separates it into granules, bundles or lobules, and serves to conduct blood-vessels for its nutrition and growth. The fibrous tissue does not often enter into the formation of carcinoma as we are now considering it. The serous tissue, on the contrary, is frequently present, forming either a capsule to deposit, or giving rise to cysts containing gelatinous, albuminous or other fluids. The blood-vessels vary in size, and are frequently very numerous; their walls are extremely delicate; and have much more of a venous than arterial character. They are, as we have above remarked, derived from those of the surrounding tissue; they assume the appearance of striæ or slender streaks of blood, and afterwards acquire a cylindrical arrangement and ramiform distribution, constituting what is termed the proper circulation of cephaloma. The blood-vessels in scirrhoma seem to be the unaltered vessels of the surrounding tissue enclosed within the substance of the morbid mass. In contemplating the physiological characters of carcinoma, the functions of circulation and nutrition actively carried on in these deposits are of the first importance: by turning our attention to the direct or collateral circulation, we have an explanation of the remarkable changes which take place during the progress of these formations. The quantity of blood and the various shades of colour of the carcinoma will depend upon the freedom with which the circulation is performed. Obstruction to the returning circulation would produce congestion of the whole or a portion of the tumour, giving rise to an increase in colour, or a rupture of the vessels, with effusion of blood in clots, producing afterwards the cerebriform character of carcinoma; if the obstruction is perfect the circulation in the tumour ceases, and death ensues in all its parts which have been supplied with blood by the now obstructed vessels.

"The termination of carcinoma in mortification from obliteration of the veins is far from being a rare occurrence. It sometimes occurs in whole tumours, but is most frequently observed in portions of them, or in some of the small tumours of which larger ones are frequently composed, that are attached by narrow, pedunculated extremities. The unequal development of one of these small tumours may give rise to compression of a neighbouring one; or the tissue to which they are attached may, from its unyielding nature, act as a ligature on their pedunculated extremities, and intercept the return of the venous blood through them. The protruding portion, now relieved from the pressure to which it was before subjected, increases rapidly in bulk; but the dimensions of the opening through which it passed remaining the same, a degree of constric-

tion is produced which arrests the circulation through its vessels, when it dies and sloughs. Hence the delusive hope that nature had effected a cure of the disease, not only on account of the diminution of bulk, but also the imperfect cicatrization which sometimes follows the sloughing process. It is on the principle of diminishing the supply of blood for the nutrition and growth of these tumours, that the frequent local abstraction of this fluid, the application of cold, the use of the ligature and compression, have been recommended as the most effectual means of retarding or arresting their progress."

Congestion, hæmorrhage, softening and sloughing take place in both species of carcinoma: in scirrhoma, they originate in the vascular system of the tissue included within the carcinomatous mass, and are not less destructive than those which arise in the proper and collateral circulation in cephaloma. Nerves as a new production have never been discovered in carcinoma, although M. MAUNOIR, of Geneva, asserted that cephaloma from its resemblance to the brain was in reality the substance of the nerves effused under the influence of some peculiar morbid state.

We have thus far given an accurate and faithful analysis of what we consider to be the commencement of one of the richest contributions to pathology in the present day; and which must eventually command a high and elevated rank as authority upon the subjects treated of in its pages. While the text bears upon it the impress of a sound and philosophical mind, its illustrations indicate a chaste and discriminating taste. A. L. W.

BIBLIOGRAPHICAL NOTICES.

XIV. *Observations on Injuries and Diseases of the Rectum.* By HERBERT MAYO, F. R. S. Surgeon to the Middlesex Hospital. London, 1833. pp. 220. oct.

Diseases of the anus and rectum are sources of great distress to a no small portion of the human family in every quarter of the globe; some of them are among the most painful, and others among the most disgusting affections which fall under the notice of the surgeon, and he who contributes in the slightest degree to elucidate their nature and treatment, deserves the cordial thanks of the profession and the public. The authors who have written upon these complaints are indeed sufficiently numerous to furnish no inconsiderable catalogue; yet it is to be regretted that the diagnosis of the various morbid changes which occur at the outlet of the alimentary canal, is still involved in great confusion. Under each of the several heads of neuralgia, fistula, piles, scirrhus, &c. we frequently find diseases enumerated which have no resemblance in their causes, nature, or location, until it has become almost necessary for an author, who wishes to be definite, to explain his own acceptation of terms familiarly employed by all: even the anatomy of the parts interested is not sufficiently borne in mind by most of the writers who treat upon their chirurgical treatment. Lest we should be deemed harsh or hasty in these strictures, when it is remembered that men of high merit and universal reputation are among the censured, we will mention one or two facts in explanation of our meaning. Under the heads of hæmorrhoids, we find included by different teachers of eminence, all the following affections:—varicosity of the hæmorrhoidal veins, ecchymoses about the anus, dense and firm tumours of little vascularity, partial evertions of the integuments of the anal canal, hypertrophy of the mucous membrane, various excrescences exterior to the anus, condylomata, (which are even described by some as fleshy tumours,) and probably some other enlargements, for we cannot pause to complete the list! When a surgeon, then, speaks of a case of piles, who shall comprehend to which of these heterogeneous affections he alludes? As to the vagueness in using anatomical terms, we will merely refer to the almost constant habit of speaking of the sphincter muscles in the singular number, as though there existed but one sphincter; a habit well calculated to confuse the student in his practical inferences, as will be perceived hereafter.

The little work before us is by no means free from the defects just mentioned, but it is written, upon the whole, with considerable perspicuity, and although it may not add very largely to the stock of knowledge already possessed by the profession, it contains many valuable facts and suggestions, marked by a due degree of originality.

The first chapter of Mr. Mayo's work treats of *lacerations of the rectum* whether partial or complete. To the former species of laceration he applies the term *fissure of the mucous membrane.* It is a transverse rent in the internal membrane caused by the action of indurated fæces in persons habitually costive, and is lo-

cated *just within the sphincter*, (i. e. the internal sphincter.) This accident must not be confused with the *fissure of the anus* of Boyer, which is generally seated just within the *external sphincter*, and is always longitudinal, for these affections are very widely different both in symptoms and treatment. Exquisite soreness is generally felt at the moment of the accident, and is renewed, with increasing severity, at each succeeding stool. The rent soon degenerates into an ulcer, and is readily recognised by the finger. It is surrounded by slight hardness, and is almost always found at the back part of the canal. The mode in which this laceration is produced must be obvious to all who are acquainted with the anatomy of the part. It is at first very simple in its nature, and yields readily to the daily use of enemata of warm water, the application of mild mercurial cintment, and proper laxatives; but, when neglected, it may produce a long train of deceptive symptoms, and may become exceedingly unmanageable, yielding only after the division of the sphincter, as performed in the operation for fistula in ano. Several very interesting cases are given, and the third case deserves especial attention, because its nature was at first mistaken.

The patient had been labouring under a train of anal symptoms for fifteen months previous to his application to Mr. Mayo; and the rent appears to have taken place but one month after their first commencement. The symptoms were briefly as follows:—heat and pain at stool, continuing some hours, followed by numbness; during the pain the anus was strongly drawn upward. The pain was extended to the hips and sacrum. A slight mucous discharge followed the laceration. Other symptoms led to a suspicion that the prostate gland was affected. The patient urinated frequently, pain deeply seated in the perineum followed the discharge, and mucous flowed from the urethra. The prostate gland was large, and tender on pressure. The patient was treated by the hip-bath, leeches to the perineum, and cups to the sacrum, opiate suppositories, and tepid enemata. The bowels became regular, but the other symptoms were unabated. At last the ulcer was detected, and as it did not yield to the usual measures of Mr. Mayo, the sphincter was divided, and the incision prevented from healing immediately by means of lint. Prompt relief was experienced, and under the application of mild mercurial ointment, the ulcer was cured. The affection of the urinary apparatus subsided, pari-passu, with the rectal disease.

This case is highly interesting, as an elucidation of the strong association between the urinary apparatus and the anus, and also from the resemblance between the symptoms described and those of the first stage of the neuralgia of the anus of M. Campaignic, or the tic douloureux of the bladder, as it is termed by many surgeons, with at least *equal* propriety. Indeed, it may be laid down as a safe and valuable practical precept, that when there is a difficulty in assigning an obvious cause for any unusual train of symptoms in the bladder or urethra, the anus and rectum should be carefully examined, and vice versa.

Next in order follows a case of recto-vaginal communication from complete laceration of the intestine; then another, of stercoraceous abscess from the same cause, in which there is nothing novel; both accidents occurring from costiveness. Mr. Mayo then gives some terrible instances of laceration from the use of syringes; among the rest he refers to a preparation in St. Bartholomew's Hospital from the body of a patient killed by the injection of a pint of water-gruel

into *the cavity of the abdomen!*—and he states that a similar accident has occurred in private practice! Indeed, it is wonderful that more numerous disasters of this kind are not forced upon the notice of the public, when every ignorant nurse, and even patients themselves, are encouraged to thrust three or four inches of an inflexible metallic tube into a tortuous canal, of which they understand not the course, and when it is well known that if it is introduced in the usual direction, it comes to bear directly on the prostate gland, long before it has entered to that extent! No syringe, placed in unprofessional hands, should be furnished with more than two inches of pipe—Mr. Mayo says one inch and a half. The neglect of this precaution is believed to be one of the principal causes of the alarming frequency of diseases of the anus on the continent of Europe, and especially in France.

Our author next proceeds to speak of the lacerations occurring during labour, the horrible character of which, when they prove extensive, are well known to all as amongst the most distressing that can occur to a surgeon; fortunate indeed it is, that they are rare! Mr. Mayo has been repeatedly successful in closing extensive rents involving the sphincters, by relieving the tension of the sides of the opening, caused by the retraction of those muscles, by means of lateral incisions, such as are made in the operation for fistula. The muscles being thus divided on each side, the edges of the rent, if recent, are repeatedly stimulated by nitrate of silver, and if long neglected, are pared off and drawn together by sutures. After the rent is healed, the lateral incisions are allowed to heal, and the sphincters recover their power.

The second chapter treats of *protrusion of the rectum.* It contains a very fair cursory view of the affection, but we observe nothing of novel interest, and must therefore confine ourselves to a very few remarks. We must protest against the grounds upon which Mr. Mayo opposes the opinion attributed to Dupuytren, that prolapsus ani is a displacement of the mucous and submucous tissue only. This opinion is decidedly that of the mass of the profession, and our author opposes to it, firstly, a figure from a preparation in the museum of King's College, in which an inversion of all the coats of the intestine is presented, but without any history of the circumstance; and secondly, a case of his own, in which, after removing the lower end of the rectum, together with the sphincters, prolapsus of the whole intestine supervened. Upon such evidence he appears to draw the conclusion, that prolapsus ani is invariably an inversion of all the coats! No doubt the whole thickness of the intestine is sometimes involved, though we have always been inclined to doubt the possibility of such an occurrence in proper prolapsus ani, being disposed to attribute the complete eversion to the gradual descent of a true intussusception of the rectum occurring originally at the superior margin of the internal sphincter, or at the upper part of the sac of the rectum—both which accidents we have examined particularly, but we cannot pause to argue the point at present. Mr. Mayo objects to M. Dupuytren's mode of operating for the cure of confirmed prolapsus, by removing several folds of the integument around the anus; he recommends the excision of a single fold, (p. 43;) but certainly the number of folds removed should bear some relation to the mass of relaxed skin, which is often exceedingly redundant, and by its constant pressure dilates and weakens the sphincters, especially the sphincter externus.

The third chapter treats of *hæmorrhage from, and pain in the rectum.* In speaking of the nervous affections which not unfrequently deceive the practitioner, in cases of hæmorrhage from the rectum, the author refers to the very interesting case of a lady mentioned by Mr. Brodie in the Medical Gazette, Vol. V. where the disease was mistaken for stricture of the œsophagus. We recently heard from Dr. Samuel Jackson, of a most singular instance of hæmorrhoidal flux simulating disease of the heart, and at first treated as such. Whenever a female presents that peculiar aspect that marks the habitual and excessive loss of blood, accompanied by severe palpitations of the heart, or inexplicable nervous disorder of any kind, we should always assure ourselves as to the existence of hæmorrhage from the rectum as well as from the uterus.

In chapter fourth Mr. Mayo considers the nature and treatment of piles. As our limits will not permit us to analyze its contents, we dismiss it with the remark, that the second section, *on external piles*, is liable to the censure passed at the commencement of this article; it confuses, under one general head, several very distinct affections. At page 99, the author judiciously remarks, that "as a general rule, growths external to the anus are to be removed by the scalpel, as the tumours which form within, are, for the most part, best removed by the ligature," we cannot forbear alluding in this place to the beautiful method of operating adopted by Dr. Physick in cases of tumour partly within and partly external to the verge of the anus. He employs the ligature, but in order to prevent the terrible and dangerous agony resulting from the action of the ligature upon the exquisitely sensitive integument about the margin, he divides the integument round the external portion of the tumour, and carries the ligature through the route of the incision so as not to act upon any portion of skin, while he enjoys every security against dangerous loss of blood.

In the succeeding chapter, on *fistula in ano*, we are struck with the light manner in which the danger of hæmorrhage after operations is treated.

> "It sometimes happens, if the sinus extends some length by the side of the rectum, that a slight hæmorrhage follows the operation. This, however, is seldom more than bathing the part with cold water, and keeping it exposed, will arrest. *I have never seen it extend beyond this.* Still it is evident that smart arterial hæmorrhage may sometimes take place from the rectum, either after operations for fistula, or on other occasions." p. 118.

The author objects to the operation by ligature as unnecessarily tedious. We are not among those who live very strongly in dread of hæmorrhage from ordinary incisions about the rectum, being fully convinced that although it is often alarming in extent, and at other times concealed and insidious, yet it is controllable in most cases when the surgeon is both vigilant and thoroughly competent; but he who would undertake to lay open by the knife the whole extent of some fistulæ that are met with in the course of a tolerably extensive practice, would certainly find to his cost that there are vessels in the rectum, that cannot be checked by cold and exposure, or even by the needle and ligature, with all the aid of Weiss's improved speculum ani, yet these fistulæ yield readily to those means against which Mr. Mayo objects.

The remainder of the work is defective in arrangement, but it is replete with valuable matter. Twenty-three pages are devoted to a subject of great importance, but one which, perhaps, may be said never to have received a phi-

losophical investigation;—the remote and immediate causes of costiveness. The theme is one that would require much more space than the entire volume occupies, in order to its full discussion, but short as are these remarks, they possess great interest, and are quite sufficient to expose the fallacy of the common custom of forcing or attempting to force the peristaltic action in all cases alike by means of purgatives. Next follow some remarks on the introduction of instruments into the rectum—rendered doubly valuable in consequence of the freedom with which some practitioners have of late recommended the dilatation of strictures in the sigmoid flexure of the colon, &c. operations that have been recommended with far too little caution, and which require consummate dexterity, the most accurate tact, and a profound knowledge of the anatomy of the parts, to render them even tolerably safe. According to Mr. Mayo, a good wax rectum bougie should be perfectly flexible when dipped in warm water. Even when perfectly flexible it meets with resistance after entering five or six inches, from its catching in the sacculi of the intestine, which it is impossible to avoid, and which it pushes before it like so many blind sacs. If force is used, the bougie tears the gut and enters the belly. Some nicety is required to distinguish this resistance from stricture, and surgeons are occasionally deceived. By gently withdrawing the instrument, changing its direction, and then again advancing it, the proper canal may be followed; Mr. Mayo makes no exception to this rule, but there is a preparation of a healthy rectum in the cabinet of Dr. Horner, Professor of Anatomy in the University of Pennsylvania, which we presume could not possibly have given passage to a bougie. An instrument from half to three-quarters of an inch in diameter is considered quite large enough, and if it passes readily without pain it may be safely presumed that there is no contraction. Before the introduction a double bend should be given to it—one to adapt it to the curve of the sacrum, the other to meet the inclination of the sigmoid flexure to the left, but as this flexure in some rare cases inclines to the right, the surgeon must be awake to any unusual resistance, and take his measures accordingly. Fortunately, it is seldom necessary to introduce the bougie beyond four or five inches—though Mr. Mayo once passed it three feet into the canal! The introduction of flexible tubes requires still greater care, because they are more liable to become entangled.

"The great point which cannot be too strongly impressed on the mind of the practitioner, is the extreme delicacy of the part, and the readiness with which it will tear under very moderate pressure."

The subject of strictures of the rectum, both spasmodic and permanent, is treated at some length; much stress is laid on the proper regulation of diet as a means of counteracting the former, and many practical hints are given for the management of the bougie in the latter. Numerous highly interesting cases are narrated, and in several of them the permanent stricture was divided. This operation, however, the author does not recommend except under very pressing circumstances, because of the danger of concealed hæmorrhage into the rectum, which sometimes goes on to an alarming extent. (p. 174.) Cases are also given of strictures of the sigmoid flexure, and other parts of the colon, and of obstructions from invagination of the superior within the inferior portion of the rectum, as described by Mr. Earle and Mr. Chevalier. Then follows a very

short notice of spasmodic and permanent contraction of the anus, the former of which he considers as "a kind of cramp."

The seventh, and last chapter, treats of cancer of the rectum in its two distinct forms, the one attended with firm, cartilaginous thickening of the muscular coat, with abrasion of the mucous coat, the other producing a fungoid growth, and attended with much greater thickening. The various means of lessening the evils inseparable from these incurable affections, and of prolonging life by regimen, the bougie, incisions, &c. are described.

We have then an account of the excision of a carcinomatous tumour within the rectum, by Mr. Crosse of Norwich, terminating ultimately in a return of the disease, and death: and a case in which Mr. Mayo removed the lower portion of the intestine, together with the sphincters, for a similar complaint. The patient enjoyed considerable comfort after the operation. The cicatrix formed a canal which neither embarrassed the discharge of fæces materially, nor permitted their involuntarily flux. Irremediable prolapsus supervened, and the patient died of abdominal inflammation about two years after the operation. The work concludes with another case of carcinoma terminating fatally after the partial removal of the diseased mass by ligature.

This treatise certainly contains much valuable matter; it is written in a lucid style, though it bears marks of haste, which are perhaps a sufficient explanation of its imperfect arrangement. The strongest censure which we pass upon it is a rare one in these latter times—it is too short; had it pleased the author to bestow upon the subject a little more time and space, the work would have been more worthy of the powers and practical information of the writer, and of the importance of the subject; and yet, perhaps, it is ungrateful to complain while we acknowledge that the obligation conferred is by no means inconsiderable.

R. C.

XV. *An Investigation into the Remarkable Medicinal Effects resulting from the External Application of Veratria.* By Alexander Turnbull, M. D. London, 1834. pp. 96.

Almost all the plants belonging to the natural order Colchideæ are possessed of energetic medicinal properties; this is owing to a peculiar principle common to them all—discovered by Pelletier and Caventou, and which has received the various names of *veratrinum, veratrina, veratria* and *sabadilline.* In a late memoir by Mr. Couerbe, it appears, however, that this substance is not a simple body, but is composed of three separate principles, which he terms, *veratrine, sabadilline,* and *mono-hydrate of sabadilline.*

The veratria of commerce is in the form of a fine white powder, without smell, but acting as a violent sternutatory. Its taste is acrid, and when introduced into the stomach, even in minute doses, acts as a powerful emetic and purgative. When applied externally, in the form of ointment, however, a very different series of actions are produced—"when rubbed upon the surface of the body to the extent of six or eight grains a day, for several weeks or even months together, it calms irritation, removes pain, and produces considerable elevation of spirits." Dr. Turnbull also states that such a degree of constipation is often induced as to require the use of purgatives. In diseases attended

with aqueous effusion, the external application of veratria is attended with the happiest effects, as it acts as a powerful diuretic, which it never does in other cases.

Dr. Turnbull goes on to say, that the ointment causes no outward marks of irritation on the skin, even when the friction has been continued for some length of time; in some rare instances a slight blush is produced which soon vanishes. After some grains have been rubbed in, however, there is a sense of tingling and warmth in the part, and until this is produced, the peculiar effects of the medicine do not manifest themselves. After the ointment has been used until the general system is under its influence, the feeling of heat and tingling extends itself over the whole surface of the body, sometimes accompanied with involuntary twitchings of the muscles of the mouth and eyelids, but these latter symptoms disappear if the use of the ointment be discontinued for a day or two.

Dr. Turnbull has found that where veratria was applied to a part denuded of the cuticle, although the effects on the system were much greater than when applied to an unbroken surface, yet, that the extreme irritation which ensued forbade a repetition of the practice.

After having thus given an account of the general effects of the medicine, the author next proceeds to the consideration of the diseases in which he has found it useful. The first of which he speaks are *affections of the heart* in which although there is no decided organic derangement, the symptoms are of such a character as to be exceedingly distressing, as difficulty of breathing, with cough and expectoration, inability to remain any length of time in a recumbent posture, palpitation, &c. &c.

In these cases he recommends the ointment to be made with fifteen to twenty grains of veratria to the ounce of lard, and of this, a piece the size of a nut to be rubbed over the region of the heart for five minutes, once a day. During its action upon the system, the pulse increases in strength and regularity, and the distress and anxiety gradually wear away. Sometimes, however, the first or second application of the remedy induces a great increase of the palpitation, but when this irritation subsides, all traces of disease disappear with it.

Dr. Turnbull exemplifies its use in these anomalous disorders, by a variety of cases, which are extremely interesting and fully confirm his statements of the efficacy of the remedy. The next class of disorders in which he has found veratria useful are the neuralgic affections, and he states that in these the relief afforded is speedy and almost certain, and that in tic douloureux the paroxysm has been brought to a termination by the first friction, and never returned. In most cases the ointment of the strength above-mentioned has been found sufficient, but in some cases it has been requisite to use it of greater power, even as high as forty grains to the ounce of lard.

In rheumatism Dr. Turnbull has used it in the acute stage of the disease with decided benefit after the usual antiphlogistic remedies had been resorted to. From the extent of surface affected in this disease, and the quantity of ointment required to be used, the proportion of veratria should not be as great as in the cases last mentioned, but should bear a certain relation to the space over which it is applied.

In paralysis he has not been enabled to try the effects of this remedy in suf-

ficient number of cases to lay down any general rules for its employment, but in those in which he did use it, he was well satisfied with its effects.

In dropsies he speaks of its successful employment in the highest terms, especially in hydrothorax, ascites and anasarca; many cases of which he states were cured in a week or two, even where the severity of the symptoms was such as to threaten the life of the patient in a few hours. There appear, says he, to be two states of the disease in which the veratria is useful. One, where the pathological condition of the organs on which it depended has been removed; yet, where the aqueous effusion remains from a want of action in the absorbents; the other, where the organic change is such as will admit of no remedy. In the former, the use of the veratria soon restores the patient to health, and in the latter, great relief is afforded. It is necessary to obtain the full benefit of the remedy in dropsy, that preliminary measures may be adopted to put the constitution of the patient in as good a state as possible before it is made use of.

In addition to these diseases, Dr. Turnbull has derived much benefit from the use of veratria in gout, amaurosis, &c. He concludes by stating, that it is of primary importance, that the veratria be in a state of purity, or the practitioner will be disappointed in the expected results, and adds that much found in commerce is adulterated with phosphate of lime.

We are afraid that Dr. Turnbull, like most other advocates of new remedies, has viewed this article in too favourable a light, and that a more extended use of it will show that it is not as infallible as his book would lead us to believe. At the same time it richly deserves a trial, and we hope the results may be as successful as those of the author of the memoir. R. E. G.

XVI. *Transactions of the Medical Society of the State of New York. Vol. II. Part I.* To be continued annually. Albany, 1834. 8vo. pp. 176.

The printed transactions of the various medical associations of Europe, rank among the most interesting and useful of the works which compose the library of the practical physician. Among the essays they contain are to be found the original sketches, or more properly the nuclei of many of those valuable monographs in the various departments of our science, for which the profession is indebted to the industry and talents of some of its most distinguished members.

In this country but few of our medical institutions are in the habit of publishing their own transactions: the members preferring, in general, to present their respective communications to the public through the medium of some one of the medical journals published amongst us. The latter practice is in many points of view, we are persuaded, to be preferred. However more imposing a volume of medical transactions may seem, yet, from the long intervals at which such works ordinarily appear, the very great expense attending their publication, and their consequent contracted circulation, it is evident that the interests of all the members of the medical profession, as well they who communicate as they who seek for information, are far better served by inserting the transactions of medical societies in the professional journals already established, than by publishing them as separate works. In relation to this as well as to all other subjects of a scientific nature, utility should be preferred to every other consideration.

Notwithstanding but few volumes of American medical transactions have appeared, these few will bear a very favourable comparison with the printed transactions of the most celebrated of the medical institutions of Europe. In evidence of this statement, we might adduce, in particular, the transactions of the state medical society of New York, the contents of the initial part of the second volume of which we are now about to notice. It contains eight articles on different subjects, no one of which can be read by the physician without interest, nor without his deriving from it some important practical hint.

Art. I. *Annual Address on Dysentery.* By Thomas Spencer, M. D.—In this essay we have an excellent, though concise account of the symptoms and causes of dysentery, (in the course of which the writer presents some judicious remarks upon the nature of epidemics generally) a very correct view of the pathology of the disease, and an able outline of its proper treatment.

Dr. Spencer ranks blood-letting, both general and topical, among the most important remedies in the ordinary cases of dysentery. Its neglect in the early stages of the attack has in very many instances, we are persuaded, subjected the patient to a very great amount of unnecessary suffering, and not unfrequently to such neglect is to be attributed mainly the fatal termination of the disease. Dr. S. very properly objects to the usual plan of irritating the diseased bowels by repeated doses of active purgatives; preferring to abate the morbid irritability and increased action of the intestines by the judicious employment of opiates.

Dr. S. speaks strongly in favour of emetics in the treatment of dysentery. In the very onset of the disease, when the stomach is free from any very decided irritation, we have derived from their administration the most decided good effects; but at a later period we doubt very much the propriety of resorting to their use.

Art. II. *Medical Topographical Report of the County of Columbia, drawn up by a Committee of the Medical Society of that County.*

Art. III. *Medical Topographical Report of the County of Madison.* By Alvin Foord, M. D.

Both of these are useful and interesting papers. Our physicians generally are beginning to appreciate the importance of similar reports, and we trust that the time is not far distant when we shall be presented with them from every section of the United States. Such reports when accurately drawn up afford materials for a medical geography of the country, and are calculated to shed not a little light upon the causes of endemic, if not of epidemic diseases generally.

Art. IV. *Observations on the Use of Cold Applications in Local Inflammation.* By Dr. Campble Waldo.

The remarks of the author are confined principally to the importance of cold applications in wounds of the large joints, as an efficacious means of preventing the occurrence of inflammation, as well as of reducing it when present. The correctness of the views advanced by Dr. Campble are supported by general experience. So simple and at the same time so powerful a remedy is cold, whether applied in the form of cold water or of ice, in preventing and reducing inflammation, that in a large class of injuries, and of external and internal diseases, it may with great propriety be ranked, upon the list of antiphlogistics, immediately after general and topical blood-letting.

Art. V. *On the Use of Opium in Bowel Affections.* By C. King, M. D.—In the

present paper Dr. King confines his remarks almost exclusively to the use of opium in the treatment of colic. He commences by pointing out the folly of attempting the cure of this disease by a course of purgation. Consisting as it does, essentially, in an irritation of the mucous membrane of the large intestine, which in the more violent grades of the disease is liable to run rapidly into the most acute inflammation, and to terminate in gangrene, unless promptly arrested by appropriate remedies, it is evident that purgatives can have no other effect than to increase the irritation which constitutes the disease, and to accelerate its fatal termination.

"In almost thirty years practice of medicine," the Doctor observes, "I never saw a case of colic in which I could trace constipation of the bowels to be the exciting or proximate cause. With me, then, there is no reason why cathartics should cure colic, on any other principle than that of depletion. The difficulties which accrue from the exhibition of cathartics in this complaint are often insurmountable and fatal to the patient. These considerations have induced me to abandon the use of cathartics in colic, and to restore this conclusion—that the first stage is the time for the physician to act. In this stage the indication of cure are, to remove the spasm and morbid sensibility from the intestines. To answer these indications, the warm bath, semicupium, fomentations of the abdomen, and injections, are useful, and ought not to be omitted. But when the attack is severe, the spasm violent, and the sensibility great, relief is only to be obtained on general principles. These are blood-letting and opium. Bleed as copiously as you would in pleurisy, and then give opium in as large doses as you would in epilepsy (?) and repeat the exhibition once an hour, till the patient becomes entirely free from pain, and falls asleep."

The practice here recommended is by no means a new one, or one peculiar to Dr. King. Twenty-three years ago we were taught by our medical preceptor in all violent cases of colic to bleed copiously, immerse the patient in a warm bath, and then putting him to bed, to administer a large dose of opium. Ever since we have been engaged in practice we have pursued the same plan of treatment, and have seldom been disappointed in its results.

Art. VI. *On the Utility of Iodine in Cases of Ununited Fractures.* By Westel Willouby, M. D.—In this paper a single case is related, in which after various means had been unsuccessfully employed to produce the union of a fracture in the bones of the leg, lotions to the fractured limb were resorted to, composed of a mixture of two parts of lime water, and one of the tincture of iodine. This lotion was repeated twice a day, using at the same time considerable friction. Within eight weeks from the commencement of the use of the iodine the union of the fracture was complete.

Art. VII. *Documents and Papers Explanatory of the Progress of Cholera, in the Auburn and Sing Sing State Prisons, during* 1832.—This article contains many interesting facts in relation to the disease of which it treats, but nothing peculiarly striking or novel.

Art. VIII. *An Essay on the History, Causes, and Treatment of Typhus Fever; to which the Annual Prize for the year* 1828 *was awarded.* By Alfred Y. Magill, M. D. of Winchester, Virginia.—This is the longest article in the present number of the transactions, occupying about eighty-two pages. The essay confers a very great deal of credit upon its author. Although had we sufficient space to enter properly into a review of it, we should be inclined to dissent entirely from the opinions of the writer in relation to the correct pathology of typhus fever,

and would be obliged to deny the correctness of a few at least of his directions for its treatment; we should, nevertheless, be constrained, viewing the essay as a whole, to bestow upon it our warmest approbation. Although the author has not in our opinion arrived at a correct view of the organic lesions by which the phenomena of typhus fever is produced, nor laid down in all its details the proper treatment for their removal, he has the good sense to perceive the folly, and reject the ridiculous notion almost universally prevalent a few years since, that the disease, namely, is one essentially of debility, demanding for its cure the liberal use of the most active and diffusible stimulants, and forbidding the employment of every species of direct depletion; a notion that has produced almost as great a destruction of human life as the disease itself.

Dr. Magill on the contrary has endeavoured to show, from the various circumstances and phenomena incident to typhus fever, that so far from being a disease of debility, it is essentially one of excitement, and frequently of inflammation and its consequences. He has further pointed out the fact, that the autopsical examination of subjects who have died of the disease, satisfactorily prove death in this variety of fever to be in general, if not always the result of inflammation, disorganizing some important part of the animal machine.

The remedies Dr. M. insists upon, for the cure of typhus, are blood-letting early and judiciously employed; active purging; the affusion of cold water upon the skin; blistering and the other items of the antiphlogistic treatment. Bark and wine he considers to be but seldom indicated. "The majority of cases of typhus," he remarks, "when treated properly in the primary stages, will not often require the use of stimulants in the last." A proposition, the truth of which we can affirm from the result of very considerable experience.

We shall not stop to notice the several points in relation to which we differ in opinion from Dr. M. In discussing the subject of typhus fever it is all important to define accurately the precise concourse of symptoms to which the term is intended to be restricted. By neglecting to do this, Dr. M. has, we apprehend, in common with the majority of medical writers been led into the error of grouping together the pathological signs of morbid conditions of various internal organs, differing materially from each other, and demanding for their removal important modifications in the nature of the remedial agents resorted to.

D. F. C.

XVII. *An Account of Jane C. Rider, the Springfield Somnambulist: the Substance of which was Delivered as a Lecture before the Springfield Lyceum.* By L. W. Belden, M. D. Springfield, 1834. pp. 134. 12mo.

Jane C. Rider, whose remarkable and interesting history is the subject of the small volume before us, is in the seventeenth year of her age, and the daughter of a respectable mechanic of Brattleborough, Vermont. In early infancy she lost her mother, who died of some disease of the brain. Jane resided with her father and the friends of her mother until April, 1833, when she removed to Springfield, where she is represented to have secured the confidence and love of all with whom she was connected.

"Her education is superior to that which is usually acquired by those occupying the middle rank in society. She is fond of reading, and especially

delights in poetry, her selections of which generally evince a chaste and correct taste. Though of a full habit, her appearance is prepossessing, and her plump and rosy cheeks, by the unprofessional observer at least, would be regarded as the index of perfect health. She, however, has always been subject to frequent head-aches, and other symptoms arising from an undue determination of blood to the head; and about three years since was, for several months, affected with *Chorea*. A small spot on the left side of the head, near the region which phrenologists assign to the organ of '*marvellousness*,' has since her earliest recollection been *tender*, or painful on pressure, and the sensibility is much increased when she suffers from head-ache. During the paroxysms to which she has lately been subject, this spot, at all times painful, is frequently the seat of such intense agony as to induce her to exclaim, 'It ought to be cut open—it ought to be cut open.' Her eyes are so sensible to the light, that she invariably suffers when she goes abroad in a clear day without a veil. From her infancy she has been in the habit of sleeping more soundly, and a greater number of hours, than is usual. She is seldom conscious of dreaming, and rarely wakes of her own accord in the morning. In her childhood she was in the habit of occasionally rising in her sleep, but did not manifest any of the peculiar powers on those occasions which have since rendered her case so remarkable."

She was first attacked with the singular affection about to be described, on the night of the 24th of June; it was then supposed that she was deranged. Dr. Belden who was called in, found her struggling to get out of bed, complaining very much at the same time of pain in the left side of the head. Her face was flushed, head hot, eyes closed, and her pulse much excited. Attributing the attack to the presence of undigested food in the stomach, Dr. Belden gave her an active emetic, which brought away a large quantity of green currants, after which she became more quiet, and soon fell into a natural sleep, from which she did not awake until morning; when she was totally unconscious of every thing that had passed during the night, and could scarcely be persuaded that she had not slept quietly the whole time. After the lapse of nearly a month she was attacked with a second paroxysm, during which after several attempts to keep her in bed, it was determined to suffer her to take her own course, and watch her movements. Released from constraint she dressed herself, went down stairs, and proceeded to make preparations for breakfast.

"She set the table, arranged the various articles with the utmost precision, went into a dark room and to a closet at the most remote corner, from which she took the coffee-cups, placed them on a waiter, turned it sideways to pass through the doors, avoided all intervening obstacles, and deposited the whole safely on the table.

"She then went into the pantry, the blinds of which were shut, and the door closed after her. She there skimmed the milk, poured the cream into one cup and the milk into another without spilling a drop. She then cut the bread, placed it regularly on the plate, and divided the slices in the middle. In fine, she went through the whole operation of preparing breakfast with as much precision as she could in open day; and this with her eyes closed, and without any light except that of one lamp which was standing in the breakfast room to enable the family to observe her operations. During the whole time she seemed to take no notice of those around her, unless they purposely stood in her way, or placed chairs or other obstacles before her, when she avoided them, with an expression of impatience at being thus disturbed.

"She finally returned voluntarily to bed, and on finding the table arranged for breakfast when she made her appearance in the morning, inquired why she had been suffered to sleep, while another had performed her duty. None of the transactions of the preceding night had left the slightest impression on her

mind—a sense of fatigue the following day being the only evidence furnished by her conciousness in conformation of the testimony of those who saw her."

After this the paroxysms became more frequent, a week seldom passing without two or three, but she was not always precisely similarly affected.

"Sometimes she did not leave her room, but was occupied in looking over the contents of her trunk, and arranging the different articles of dress. She occasionally placed things where she could not find them when awake, but some circumstances induced the belief that the knowledge of their situation was restored to her in a subsequent paroxysm. In one instance she disposed of her needle-book where she could not afterwards discover it; but after some time had elapsed, she was found one night in her chamber, sewing a ring on the curtain with a needle which she must have procured from the lost book.

"The entire paroxysm was sometimes passed in bed, where she sung, talked, and repeated passages of poetry. Once she imagined herself at Brattleborough, spoke of scenes and persons with which she was acquainted there, and described the characters of certain individuals with great accuracy and shrewdness, and imitated their actions so exactly as to produce a most comical effect. At this time she denied ever having been at Springfield, nor could she be made to recollect a single individual with whom she was acquainted here, except one or two whom she had known in Brattleborough. Even the name of the people with whom she lived seemed unfamiliar and strange to her.

"Generally her conceptions relative to place were, to a certain extent, correct—those relating to time were very commonly inaccurate. She almost invariably supposed it was *day;* hence her common reply when reminded that it was time for her to retire, was, 'What! go to bed in the day time?" And when I say her notions relative to place were in accordance with fact, the statement requires considerable limitation. She very frequently imagined herself in a different room from the one where she actually was, and almost always in the room which she usually occupied when awake.

"Still her *movements* were always regulated by the senses, and not by her preconceived notions of things. Her chamber was contiguous to a hall, at one extremity of which was the staircase. At the head of the stairs was a door which was usually left open, but which was once closed after she was asleep, and fastened by placing the blade of a knife over the latch. On getting up, she rushed impetuously from her room, and without stopping, reached out her hand before she came to the door, seized the knife, and throwing it indignantly on the floor, exclaimed, 'Why do you wish to fasten me in?'

"Without entering into minute detail, I will only mention some of the most remarkable circumstances which occurred at this early period of the complaint.

"Allusion has been made to her sewing in the dark, and circumstances render it almost certain that she must at that time have threaded her needle also. Some time after this occurrence she conceived the plan, during a paroxysm, of making a bag, in which, as she said, to boil some squash. She was then seen to thread a needle in a room in which there was barely light enough to enable others to perceive what she was about, and afterwards, the same night, she was seen to do it with her eyes closed. In this condition she completed the bag, and though a little puckered, as she observed, it still answered very well to boil the squash in.

"In one instance she not only arranged the table for a meal, but actually prepared a dinner in the night, with her eyes closed. She first went into the cellar in the dark, procured the vegetables, washed each kind separately, brought in the wood and made a fire. While they were being boiled, she completed the arrangements of the table, and then proceeded to try the vegetables to ascertain whether they were sufficiently cooked. After repeated trials, she observed the smallest of them were done—she took them up, and after waiting a little, said the rest would do, and took them up also. They were actually very well cook-

ed. She then remarked that S., a little girl in the family, ate milk, and procured a bowl for her—she also procured one for herself and ate it. As the family did not seat themselves at table, she became impatient, and complained that the men never were ready for their dinner. While engaged in her preparations, she observed a lamp burning in the room, and extinguished it, saying 'she did not know why people wished to keep a lamp burning in the day time.' On being requested to go to bed, she objected, alleging, as a reason, that it was day; but was persuaded to do so by being reminded that she was not well, and that sleep would relieve her head. In the morning she appeared as usual, totally unconscious of the transactions of the preceding night.

"At first, the paroxysms occurred only in the night, and generally soon after she went to bed. As the disease advanced, they commenced earlier—she then fell asleep in the evening, sitting in her chair—or rather passed into the state of somnambulism; for her sleep, under these circumstances, was never natural. At a still later period, the attack took place at any hour during the day or evening. After she began to be affected in the day time, the fit seldom commenced when she was in bed; and even when she retired, as she often did, in this state, she usually remained quiet till the paroxysm subsided—though at times she continued to talk and sing. Sometimes she suffered two distinct paroxysms in one day."

The following is the general description as given by Dr. Belden, of the paroxysms during that period of the disease in which the extraordinary acuteness of vision was manifested—after this was lost, most of the other symptoms were less marked, and many of them disappeared entirely.

"The state of somnambulism was usually preceded by a full, heavy, unpleasant feeling in the head—sometimes by head-ache, ringing in the ears, cold extremities, and an irresistible propensity to drowsiness, attended with a feeling as if weights were appended to the eyelids. There was almost always a slight contraction of the eyebrows, the cheeks were flushed, and sometimes tinged with a crimson hue. By great exertions, the fit might be put off for hours after the appearance of these symptoms; but, in order to gain this reprieve, it was necessary for her to walk, or be engaged in some active employment. The most effectual preventive was exposure to the open air. The moment these precautions were relaxed, and sometimes even in the midst of her active duties, she experienced what she described as a sense of rushing to the head, attended with a loss of the power of speech and motion. If in this state she was immediately carried into the open air, the fit was often arrested; but if this was delayed a moment too long, she lost all recollection, and could not by any efforts be aroused. To a spectator she appeared like a person going quietly to sleep. Her eyes were closed, the respirations became long and deep, her attitude, and the motions of her head, resembled those of a person in a profound slumber. During the fit, the breathing, though sometimes natural, was often hurried, and attended with a peculiar moaning sound, indicative of suffering. At times the pulse was accelerated, but generally it did not vary much from the natural standard. I have remarked, that in her first paroxysm the head was hot, but such was not commonly the case, nor was there any peculiar throbbing of the temporal arteries—the hands and feet, however, were almost invariably cold.

"Her manner differed exceedingly in different paroxysms. Sometimes she engaged in her usual occupations, and then her motions were remarkably quick and impetuous—she moved with astonishing rapidity, and accomplished whatever she attempted with a celerity of which she is utterly incapable in her natural state. She frequently sat in a rocking-chair, at times nodding, and then moving her head from side to side with a kind of nervous uneasiness, the hand and fingers being at the same time affected with a sort of involuntary motion. In the intervals of reading or talking, and even when engaged in these very acts, her nods, the expressions of her countenance, and her apparent insensi-

bility to surrounding objects, forced upon the mind the conviction that she was asleep. Occasionally she was cheerful, disposed to talk, and willing to exercise her powers; the greater part of the time she was irritable and petulant. Pain in a circumscribed spot on the left side of the head was, I believe, always an attendant on the paroxysm, and frequently occasioned a degree of suffering almost beyond endurance. To this spot she invariably pointed as the seat of her agony when she repeated the expression, "it ought to be cut open, it ought to be cut open." Occasionally the whole system was thrown into agitation, and she presented the appearance of a person in a violent fit of hysterics.

"Her eyes were generally closed, but at times they were stretched widely open, and the pupil was then very considerably dilated. These different states of the eye seemed to occasion no difference in the power of seeing—she saw apparently as well when they were closed as she did when they were open. In the day time she always had the eyes covered with a bandage during the paroxysm, nor would she allow it to be removed for a single moment, unless the room was unusually dark. In order to test the sensibility of the eye, I took one evening a small concave mirror, and held it so that the rays proceeding from a lamp were reflected upon her closed eyelid. When the light was so diffused that the outline of the illuminated space could scarcely be distinguished, it caused, the moment it fell on the eyelid, a shock equal to that produced by an electric battery, followed by the exclamation, 'why do you wish to shoot me in the eyes?' This experiment was repeated several times, and was always attended with the same result. It was also tried when she was awake, and the effect, though less striking, was very perceptible. The same degree of light thrown on my eyelids, occasioned no pain.

"How far she was sensible to the presence of surrounding objects, it is very difficult to determine; indeed, facts seem to prove that she was not, in every paroxysm, alike in this respect. In the early stage of her complaint, she appeared to take little notice of persons, unless they were connected with her train of thought, and then she regarded those with her only as the representatives of the persons whom she imagined to be present. Nor did the sight or the hearing have any tendency to correct the false impression. Thus, in her first paroxysm, she regarded me as her father, and continued to do so as long as I remained with her; but, in her subsequent fits, this idea was never revived. Her conception of persons was generally made to correspond with the idea of the place in which she conceived herself to be. She was in the habit, when well, of spending her evenings in the room with the children of the family, and it was in their company that she often imagined herself to be during the paroxysm. The questions which were at these times proposed to her to test her powers of vision, were cheerfully and readily answered, because they were questions which it was natural for children to ask; or, at least, she supposed them to proceed from children. Much that she said was also directed to them, though it was evident, at times, her conceptions and perceptions were strangely intermingled. In a paroxysm, soon after the arrival of her father, he asked her a question which she answered by addressing a little boy belonging to the family, who was not then in the room; but his knife which he placed in her hand, she immediately recognised as her father's, and wondered how that came to be in Springfield while he was in Brattleborough. At a later period of her complaint; she appeared to comprehend more of what transpired in her presence, and accordingly she obstinately refused to read cards, or submit to experiments of any kind. These trials she then evidently regarded as so many attempts to impose upon her; and in adopting this conclusion she reasoned with perfect consistency; for if she actually could see as she appeared to—if to her vision, night was converted into day, and darkness into light, while she was unconscious of any thing peculiar to herself, what could be more annoying than to be constantly teased with questions which to her senses were perfectly obvious? If a request were made of her which appeared reasonable, especially if it related to her customary duties, she really did whatever was required.

"There is abundant evidence that she recollected, during a paroxysm, circumstances which occurred in a former attack, though there was no remembrance of them in the interval. A single illustration will suffice, though many more might be given. In a paroxysm, a lady who was present placed in her hand a bead bag which she had never before seen. She examined it, named the colours, and compared them with those of a bag belonging to a lady in the family. The latter bag being presented to her in a subsequent paroxysm, the recollection of the former was restored—she told the colours of the beads, and made the same remarks respecting the comparative value of the two bags that she had done before. I had taken measures to satisfy myself in the interval that she then remembered nothing of the first impression.

"Attempts to rouse her from this state were uniformly unsuccessful. She heard, felt, and saw; but the impressions which she received through the senses had no tendency to waken her. A pailful of cold water was in one instance thrown upon her; she exclaimed, 'Why do you wish to drown me!'—went to her chamber, changed her dress, and came down again. Large doses of laudanum were sometimes given her with a view to relieve her pain—it appeared to mitigate her sufferings, and she was observed uniformly to wake soon afterwards. Excitements of every kind, and particularly attempts to draw forth her peculiar powers, invariably prolonged the fits, and generally aggravated the pain in the head.

"At the termination of a paroxysm, she sunk into a profound sleep. The frown disappeared from her brow, the respirations again became long and deep, and the attitude was that of a person in undisturbed slumber. She soon began to gape and rub her eyes, and these motions were repeated after short intervals of repose. In the course of fifteen or twenty minutes from the first appearance of these symptoms, she opened her eyes, when recollection was at once restored. She then invariably reverted to the time and place at which the attack commenced, and in no instance, when under my care, manifested any knowledge of the time which had elapsed, or the circumstances which transpired during the interval.

"These paroxysms were very obviously connected with the state of the stomach and digestive organs. Though the appetite was generally good, food often occasioned oppression, and she not unfrequently raised a considerable portion of what she ate. She also had head-ache, acidity of stomach, and most of the symptoms usually termed dyspeptic. These circumstances had not indeed attracted much attention till after the occurrence of the paroxysms; but I then found that they had existed, in a slight degree, for some time, and that lately her sufferings from this source had been very considerably aggravated. Improper food, and other causes affecting the stomach directly, I am confident, in several instances, occasioned an attack. The very first paroxysm occurred a few hours after she had eaten a large quantity of green currants; and two or three times afterwards, a paroxysm was occasioned by medicine which disturbed the stomach.

"During the fit she very often called for food, particularly for apples; but she seldom woke as soon as usual, after having gratified her appetite. At a time when she had invariably one or two paroxysms daily, I gave her an emetic, and afterwards allowed her to take but a small quantity of the simplest food; under this course she had but one slight attack for five days, and she was in every respect much better. The paroxysm which she had in this instance occurred also under circumstances illustrative of the nature of the complaint. It came on in the stage, when she was on the way to Worcester, and was preceded by sickness, to which she is very subject when riding in a close carriage."

The family in which Jane lived were early convinced from the confidence with which she moved, and the facility with which she always avoided obstacles, that she saw both when her eyes were closed and in the dark, but no experiments were instituted to determine the fact until the evening of the 10th of No-

vember, when it was proposed to ascertain whether she could read with her eyes closed.

"She was seated in a corner of the room, the lights were placed at a distance from her, and so screened as to leave her in almost entire darkness. In this situation she read with ease a great number of cards which were presented to her, some of which were written with a pencil, and so obscurely, that in a faint light no trace could be discerned by common eyes. She told me the date of coins, even when the figures were nearly obliterated. A visitor handed her a letter, with the request that she would read the motto on the seal, which she readily did, although several persons present had been unable to decipher it with the aid of a lamp. The whole of this time the eyes were, to all appearance, perfectly closed.

"The second day after this exhibition of her power, she fell asleep in the morning in the act of procuring water from the pump. This was her first attack in the day time. Soon after, on going out of doors, she observed to her companion, 'what a beautiful day it is, how bright the sun shines!' It was in fact quite cloudy. When asked by one of the ladies of the family to thread a needle, she refused, saying, 'you can do it for yourself.' Soon after, she went into a neighbouring house, where there was an elderly lady to whom she often rendered this kind of assistance. This lady said, 'Jane, I am old, and cannot see very well, will you thread my needle for me?' She immediately complied with the request, and threaded the needle not only at that time, but once or twice afterwards. She awoke from this paroxysm in the afternoon, and was quite distressed to find the fits beginning to affect her in the day time.

"The next morning she fell asleep while I was prescribing for her, and her case having now excited considerable interest, she was visited during that and the following day by probably more than a hundred people. To this circumstance, undoubtedly, is to be attributed the unprecedented length of the paroxysm: for she did not awake till Friday morning, forty-eight hours after the attack. During this time she read a great variety of cards written and presented to her by different individuals, told the time by watches, and wrote short sentences.

"For greater security, a second handkerchief was sometimes placed below the one which she wore constantly over her eyes, but apparently without causing any obstruction to the vision. She also repeated with great propriety and distinctness several pieces of poetry, some of which she had learned in childhood, but had forgotten, and others which she had merely read several years since without having ever committed them to memory. In addition to this she sung several songs, such as 'Auld Lang Syne' and 'Bruce's Address to his Army,' with propriety and correctness. Yet she never learned to sing, and never has been known to sing a tune when awake. She was evidently very much exhausted by these efforts, and at times her sufferings were so extreme that she could not be induced to answer any questions.

"On Wednesday, November 20th, I took a large black silk handkerchief, placed between the folds two pieces of cotton batting, and applied it in such a way that the cotton came directly over the eyes, and completely filled the cavity on each side of the nose—the silk was distinctly seen to be in close contact with the skin. Various names were then written on cards, both of persons with whom she was acquainted, and of those who were unknown to her, which she read as soon as they were presented to her. This was done by most of the persons in the room. In reading she always held the paper the right side up, and brought it into the line of vision. The cards were generally placed in her hand for the purpose of attracting her notice, but when her attention was excited she read equally well that which was held before her by another. I do not know that she ever read cards which *she had never seen*, when only the back was presented to her.

"Being desirous, if possible, to prove that the eye was actually closed, I

took two large wads of cotton, and placed them directly on the closed eyelid, and then bound them on with the handkerchief before used. The cotton filled the cavity under the eyebrow, came down to the middle of the cheek, and was in close contact with the nose. The former experiments were then repeated without any difference in the result. She also took a pencil, and, while rocking in her chair, wrote her own name, each word separately, and dotted the i. Her father, who was present, asked her to write his name. 'Shall I write Little Billy or Stiff Billy,' was her reply, imagining that the question was proposed by a little boy of the name of William belonging to the family. She wrote *Stiff Billy*—the two words without connexion, and after writing them both, she went back and dotted the i in each. She then wrote *Springfield* under them, and after observing it a moment, smilingly remarked that she had left out a letter, and inserted the l in the proper place.

"A watch enclosed in a case was handed to her, and she was requested to tell the time—after examining both sides, she opened the case, and then answered the question. Afterwards, but in the same paroxysm, a gentleman present wrote his name in characters so small that no one else could distinguish it at the usual distance from the eye. As soon as the paper was put into her hand, she pronounced the name. It was thought that any attempt to open the eye would be indicated by the contraction of the skin on the forehead, but though she was closely watched, nothing of the kind was observed.

"She also at this time repeated poetry and sung, as before. This she did almost every paroxysm; and though there are some pieces which she must have repeated in this way scores of times, her knowledge of them when she is awake is not in the least improved by the practice. These experiments were performed in the presence of several of the most respectable and intelligent gentlemen in town, and they were all convinced there could be no deception.

"While she was in a paroxysm a few evenings afterwards, the lights were removed from her room, and the windows so secured that no object was discernible. Two books were then presented to her which had been selected for the purpose; she immediately told the titles of both, though one of them was a book which she had never seen before.

"Monday, Nov. 25th, she was removed to my house; but, though she had several paroxysms in the interval, nothing worthy of notice occurred till the 30th. The morning of that day, as she was engaged in her customary employments, she complained suddenly of dizziness, seated herself in a chair, and immediately became insensible. Soon after, she applied a bandage to the eyes, went to her chamber and changed part of her dress. She then came down, and taking a basket which she had purchased the day before, and which was much soiled, remarked that it was dirty, and she would wash it. This operation she performed with as much neatness and despatch as she could have done when awake.

"The room in the front part of the house she had never seen except for a few moments several months since. The shutters were closed, and it was so dark that it was impossible for any one possessing only ordinary powers of vision to distinguish the colours in the carpet. She, however, though her eyes were bandaged, noticed and commented on the various articles of furniture, and pointed out the different colours in the hearth rug. She also took up, and read several cards which were lying on the table. Soon after, observing her with a skein of thread in her hand, I offered to hold it for her to wind. She immediately placed it on my hands, and took hold of the end of the thread in a manner which satisfied me she saw it, and completed the operation as skilfully and readily as if she were awake. Having left the room a moment, I found her on my return with her needle threaded, and hemming a cambric handkerchief. She however soon abandoned her work, and was then asked to read a little while aloud. Bryant's Poems were given to her; she opened the book, and turning to the 'Thanatopsis,' read the whole, (three pages,) and the most of it with great propriety. Something being said about her manner of reading, she observed there were parts of the piece which she did not understand, that

she could read it much better if she understood it. The day before, she had procured several *samples* of calico at the shops, portions of some of which had been washed since the commencement of her paroxysm. On their being spread out before her, she not only told the shop at which she obtained each, and named its price, but compared the part which had been washed with the piece from which it was taken, and when there was any change, pointed out the difference.

"A coloured girl came in and seated herself before her: she was asked if she knew that lady; she smiled, and returned no answer. Some one said, 'She has a beautiful complexion, has she not?" Jane laughed heartily, and said, 'I should think she was somewhat tanned.'

"At dinner she took her seat at the table as usual, helped herself to bread when it was offered, presented her tumbler for water, and through the whole time, did not, by her manner or actions, betray the least want of sight. After dinner the bandage which she put over her eyes in the morning, and which she had worn ever since, was taken off, and in its place a black silk handkerchief stuffed with cotton was bound on so as to fit accurately to the nose and cheeks. Though extremely reluctant on account of severe pain in the head, she was at length prevailed on to write a part of the 'Snow Storm,' one of the pieces which she is in the habit of repeating when asleep. She finished one stanza of six lines, and part of a second. In writing she followed for a time the ruled lines placed under her paper, but they having been displaced, she proceeded without them, continuing, however, nearly in a straight line. In one or two instances she failed to make a proper division of the poetry into lines, and several times misspelled words which she would not have done had she been awake. Twice she noticed the inaccuracy in the spelling, and corrected it at the time, but when writing the same words afterwards she fell into a similar error. A person standing behind her very carefully interposed a piece of brown paper between her eyes and the paper on which she was writing. Whenever this was done she appeared disturbed, and exclaimed, 'don't, don't.' For some time I watched her narrowly to ascertain whether the bandage was constantly in place, but I could detect no change in its position.

"A watch was presented to her, the face of which was concealed by a piece of brown paper placed between it and the chrystal. Instead of telling the time, she observed, 'Any thing but a paper watch!'

"In the evening, when the room was so dark that nothing but the position of the windows could be discerned by common eyes, a blue fancy handkerchief was placed before her, and she was asked if she did not wish for a beautiful pink handkerchief—she replied, 'I hope I know blue from pink.'

"The next day, during a paroxysm, she went into a dark room and selected from among several letters, having different directions, the one bearing the name which she was requested to find. She was heard to take up one letter after another and examine it, till she came to the one for which she was in search, when she exclaimed, 'Here it is,' and brought it out. She also, with her eyes bandaged, wrote of her own accord two stanzas of poetry on a slate; the lines were straight and parallel.

"One circumstance I have omitted to mention, which is, the power of imitation which she occasionally exhibits. This extends not only to the manner, but to the language and sentiments of the persons whom she personifies: and her performances in this way are so striking, and her conceptions of character so just, that nothing can be more comical.

"This, like her other extraordinary powers, is confined to the somnambulist state—at other times she does not exhibit the slightest trace of it."

Jane's disease being manifestly aggravated by the constant trials of her peculiar powers, she was removed to the hospital in Worcester on the 5th of December, 1833. The following abstract from the record book of this institution exhibits the progress of the case, and confirms the observations relative to her remarkable powers of vision.

"Jane had no paroxysm till the evening of December 6th, the day after her admission. 'Immediately after falling asleep she began to breathe with difficulty, her mind seemed to labour, and she was uneasy and in perpetual motion. She said nothing till questions were asked her. She told the time of day by a watch, in the dark, with her eyes closed—the fire was not extinguished, and of course it was not entirely dark. Her pulse was 72 in a minute, and without irritation. She answered questions regularly, but with an air of impatience; and said 'they kept asking her to read, but she would not.' She declared she would not go to Worcester, and said she was at Mr. Stebbin's in Springfield. Afterwards she complained she was locked up in the hospital, and did not wish to stay, and that she would not have come here if she had expected to be locked up. One hour and a half after the commencement of the paroxysm, her feet was placed in a bath of the nitro-muriatic acid. In five minutes she became calm, and went into a quiet sleep: in a few minutes more she waked very pleasant.'

"From this time till the 13th, she had from one to three paroxysms daily; in some of which 'she repeated passages of poetry very sweetly; sung some tunes with correctness; and, with her eyes bandaged, walked about the house, and from room to room, without inconvenience.' Many of these paroxysms, the Doctor observes, he is now satisfied were occasioned by improper food, particularly by the free use of fruit.

"'*Dec.* 13. Jane had a more interesting paroxysm than at any time before since her residence in the hospital. In a paroxysm the day previous, she lost a book which she could not afterwards find. Immediately on the access of the paroxysm to day, she went to the sofa, raised the cushion, took up the book, and commenced reading. She read two or three pages to herself. Her eyes were then covered with a white handkerchief folded so as to make eight or ten thicknesses, and the spaces below the bandage filled with strips of black velvet. She then took a book and read audibly, distinctly, and correctly, nearly a page. It was then proposed to her to play backgammon. She said she knew nothing of the game, but consented to learn it. She commenced playing with the assistance of one acquainted with the moves, and acquired a knowledge of the game very rapidly. She handled the men and dice with facility, and counted off the points correctly. Had another paroxysm in the afternoon in which she played a number of games of backgammon, and made such proficiency that, without any assistance, she won the sixth game of Dr. Butler, who is an experienced player. Knowing her to be a novice, he suggested several alterations in her moves—these alterations she declined making, and the result showed the correctness of her judgment. The Doctor, a little mortified at being beaten by a sleeping girl, tried another game, in which she exerted all his skill. At its close she had but three men left on the board, and these so situated that a single move would have cleared the whole. While she was engaged in this game, an apple was taken from a dish, in which there were several varieties, and held before her, but higher than her eyes. On being asked its colour, she raised her head, like a person who wished to see an object a little elevated, and gave a correct answer to the question. In the lucid interval, half an hour after she awoke from the paroxysm, it was proposed to her to play backgammon. She observed she never saw it played, and was wholly ignorant of the game—on trial it was found she could not even set the men.'

"'*Dec.* 15. Paroxysm rather singular. She is full of mischief like a roguish child—is very pleasant all the while, but will not read. At twilight her eyes were more open than common, but she insisted she could not see. Ate too heartily and felt sickness at stomach.'

"'*Dec.* 16. Has been different in the paroxysms to-day. She opens her eyes and declares she cannot see, when they are shut. When reading, I placed my fingers on her eyes—she said immediately it was total darkness, and she could not read a word. The fact that her eyes are open in the paroxysms proves that they are less susceptible to light, and of course that her vision is less acute. At

dinner her eyes were open, and all the family supposed her awake; but she declared in the evening she had not the least recollection of dining, of seeing some friends, or of witnessing a catastrophe in the gallery which disturbed the whole family, and in which she was much interested at the time.'

"'*Dec.* 18. In the paroxysm this evening her eyes are open, and she appears, in all respects, like a person awake; yet her manner is very different from that which she usually exhibits. She evidently has lost her former acuteness of sight—she protests she can see nothing when blinded, and will not attempt the least thing.'

"'*Dec.* 19. During the whole day the appearance was the same as on previous days, excepting her mind was more tranquil, and she was more disposed to melancholy. She once said her head ached, and felt strangely. She appeared very much like a person insane. I gave her a letter about four o'clock, which she read, and remarked that she did not know that her friends expected her to write to them. At nine o'clock she was asked if she had seen a letter from Springfield; she denied that she had, but recollected circumstances which transpired yesterday; and, in this respect, was different from what she usually is during the paroxysm. A stranger would say, you have got an odd or insane girl, but would suspect nothing more. My family disagreed about the time of her coming out of the paroxysm; one thought she was out of it when others thought not.'

"'*Dec.* 21. Very well, and wakeful all day, but in the evening had a paroxysm of complete insanity: talked, ran about the house, and refused to take her medicine. When forced to take it she shed tears, and fell into a sort of hysterical sobbing, which lasted some minutes.'

"'*Dec.* 24. Had a paroxysm in the evening, in which she played backgammon: at first her eyes were closed, afterwards wide open. She said she could not read a word or see at all when blinded. Lately her face has been less flushed, and her head less painful.'

"'*Dec.* 30. In a paroxysm to-day she wrote the following letter to her aunt. She afterwards remembered that she had written a letter, but could not recollect its contents.'

"DEAR AUNT,

"I feel that it is my duty to write to you, and inform you of my situation, as it is a very critical one. I received a letter from father yesterday, saying he had not written to you, and wished me to do so. I thought I would try. Perhaps you will wonder how I came to Worcester Hospital—but it is for my health. As I prize that above every thing else, I was willing to deny myself a great many pleasures only for a few months. I left home last April, and went to Springfield with a young lady of my acquaintance, and liked there so well that I concluded to stay and spend the summer. While there I was attacked with the disorder that has brought me to the hospital. The first attack was in June. It was about ten in the evening—the people called a physician; he thought it was partial derangement, and gave me an emetic that stilled me a little, and I got over it, and the next day was quite well. The people thought it was a very strange disorder, and let it pass off. But I was troubled almost every week with the same disorder, and it soon became something serious. I found I was growing worse every day, and was put under the physician's care. Medicine did not seem to have any effect, and I was still growing worse. In October I was attacked in the day time. It was Tuesday morning, and it continued till Friday morning, when I went into a natural sleep, and awoke up and knew nothing of what had passed. I will not try to give you any description of what I did, as I presume you have read it in the newspapers, as my case was the one referred to, and I think the pieces are not exaggerated in the least.

"Father was sent for when I was in one of my turns, as I do not know what else to call them, and reached Springfield in about 48 hours; and an hour after I came out of it. He expected to take me home with him; but I was taken the

next morning, and continued so most of the time he was in Springfield. He said it was no place for me at home, and there must be something done. They then concluded to bring me here, as people thought if I could be cured any where it would be here; and I am happy to say I am much better than I was when I came here. I have been here about a month, and I think I shall be entirely well in two months more, as my turns are not near as often, and no two have been alike. The people of Springfield were so much interested for me, that they offered to pay my board here until I was well; so the night I left Springfield I had a present of forty-eight dollars."

"In the evening of the day on which she wrote the letter she had a very distressing paroxysm, which was followed by a mild form of fever which lasted several days."

"'*Jan.* 10. Did not feel well all day yesterday—had confusion of head and flushing of face. At evening she had a paroxysm in which she recollected all that was done in the day; and after the paroxysm all that was done in it. It lasted but half an hour, when she went into a quiet sleep and slept till morning.'

"'*Jan.* 11–13. Had slight paroxysms in which consciousness was not lost—recollected in the paroxysms what transpired in the interval, and in the interval the circumstances of the paroxysm—is greatly inclined to indulge in eating, and if she eats freely is unusually dull and sleepy afterwards.'

"'*Jan.* 19. Has had one or two paroxysms since the 13th similar to those last described. In the one to-day she repeated the 'Pilgrim's Fathers' very distinctly and correctly. I had censured her for eating fried cakes and the like between meals; and she kept a fast during the paroxysm to-day, but called for pancakes, which she said might be eaten with impunity on fast-days.'"

During a recent visit to Worcester, Dr. Belden had an opportunity of witnessing the improvement in the health of his patient.

"Her face has lost the flush which it used habitually to wear—the head is now seldom painful, and there is no tenderness at the spot formerly affected, and the natural, healthful temperature of the extremities has been restored. There is still some oppression after eating, especially if she deviates from the regulations which have been prescribed respecting her diet; and any gross violation is almost certain to be followed by a paroxysm. Strong mental emotion too, or any kind of mental or physical excitement, conduces to the same effect; and, sometimes, is of itself sufficient to occasion a fit. In a paroxysm which occurred while I was there, the eyes were open and appeared nearly natural—the pupil was, perhaps, a little more dilated than common. Her manner was hurried—the speech and motions rather quick and abrupt. She appeared to be sensible of every thing which took place around her,—knew me, and answered my questions with propriety and correctness; and, so far as I could discover, had a proper conception of the relations of time and place. A handkerchief having been tied over her eyes she declared she could not see at all—said that it was perfect darkness to her. During the whole time her perceptions appeared to be more quick and vivid than natural. Her remarks, as in the earlier periods of her disease, were often distinguished for a degree of wit and brilliancy peculiar to these occasions. She also, at this time, sung as she formerly did. In the paroxysm she recollected circumstances which transpired a short time before, but did not, the next day, remember what occurred in the fit. The termination of the paroxysm is often less distinct than it formerly was, though the access, I believe, continues to be well marked."

The latest intelligence we have of the case is contained in the following extract of a letter from Dr. Woodward to Dr. Belden.

"Jane's paroxysms have ceased altogether for the last nine days, and she is in good health, excepting a distress after taking food. She has never appeared

so cheerful, and in so good spirits, since her residence with us. During most of last week she did the duty of an assistant in the absence of one of our attendants, and she has done more or less work in the halls every day. During the last paroxysm I applied leeches to her head. She waked during the paroxysm not a little surprised at her new *head ornaments.*"

Such is the history of this remarkable case, which we have presented in all its details, conceiving them as we do to possess extreme interest. We have not considered the question of imposture in the case, entertained by some who are ignorant of physiology and of the records of medicine, because we really entertain no suspicion of deceit. Independent, in this case, of the care with which the facts appear to have been observed, the respectability of the witnesses, the character of the patient, the nature of the facts observed precluding the idea of imposition, and the analogous cases in medical records, there appears to us nothing so unprecedented as to excite our incredulity. Physiology, indeed, clearly points to an excited state of certain portions of the brain, as offering an explanation of most of the remarkable phenomenon of the case.

We placed a handkerchief eight times folded over the eyes of a medical friend, who expressed his disbelief in the possibility of any object being discernible through such an envelope, and to his surprise he could distinguish the position of the windows, and on a subsequent occasion the light of a lamp in the room. Now, the retina and cerebral organs of our friend were in a normal condition, and if in this state he could distinguish the light through so many folds of linen, it seems little extraordinary that an individual whose cerebral organs of vision are in a state of extreme excitement should be capable of distinguishing objects much more distinctly. Light and darkness are but comparative terms. It is familiar to every one that a person on entering a room dimly lighted will pronounce it perfectly dark, and yet in a few minutes be able to distinguish minute objects. Persons long confined in dungeons so dark that the visitor pronounces that no ray of light enters, have after a time been enabled to distinguish objects, and even to watch the movements of minute insects; as of spiders, &c. Nor is the fact less familiar to the physician, that patients labouring under retinitis will complain of the light, and even severely suffer from it in a room which to a healthy eye seems totally dark.

We may call attention also to the extraordinary acuteness of the other senses in certain individuals, as of the sense of hearing and of touch in the blind; and still more so in those labouring under inflammation of the auditory and tactile organs. The case of Caspar Hauser furnishes us also with evidence of an acuteness of some of the senses quite as surprising as occurred in the one under notice. There appears to us, then, nothing incredible in what has excited most surprise in Jane's case, her acuteness of sight, and although we cannot so satisfactorily explain all the other phenomena, this does not afford sufficient ground for disbelief, inasmuch as they are not in opposition to any of the established laws of nature.

There are innumerable other phenomena equally extraordinary and inexplicable, and which no one questions, but which only cease to excite our surprise because of their frequent occurrence—as intermittence in fevers, the perfect regularity of the paroxysms, &c.

XVIII. *Clinical Observations on the Constitutional Origin of the various Forms of Porrigo, commonly known by the names of Scald-head, Tinea, Ring-worm, &c. With Directions for the more Scientific and successful Management of this usually obstinate class of Diseases by a Treatment consisting of an Appropriate Modification of the Principles first particularly promulgated by Mr. Abernethy.* By George Macilwain, Surgeon to the Finsbury Dispensary, St. Ann's Society, and late Surgeon to the city of London Truss Society. London, 1834.

A thin octavo of 83 pages, heavily leaded and amply margined,—a volume which will not call forth from the reader the trite adage of *multum in parvo.* The author inculcates the necessity of a mild diet in the treatment of porrigo; and as every physician called upon to prescribe for the same affection recommends the same thing, no one will be inclined to dispute this point with him. Occasional mild purgatives, keeping the head shaved, and the application to it of weak red precipitate ointment, constitute the sum of the medical, general, and local treatment. In all this there is certainly nothing new; neither do we perceive any thing novel in his views relative to the philosophy of the disease. We have been a little puzzled by some of his passages, of which the following may serve as a specimen. Upon the subject of the varieties of porrigo, all of which he conceives are to be relieved by a similar treatment, he observes—

"Modifications in the treatment are certainly required; these, however, result, not from any difference in the local characters of the complaint, but from the variations which occur in the seat, and in the indications of the general disorder by which they are accompanied, to which may be added those obviously suggested by difference of age, and certain constitutional peculiarities."

We shall cite another example of carelessness in writing. In regard to the tate of the stomach in porrigo, he observes—

"I have not often found it necessary to interfere *medically* with this organ, further than in the correction of voracious appetite, which sometimes exists in such a degree, as greatly to irritate the nervous system. I believe that this would, in many cases, gradually subside under the influence of a rational diet alone; but its relief is much expedited by the administration of small doses of ipecacuanha or antimony—one grain of the former, or two or three grains of the latter, may be given every night with half a grain of calomel and the rhubarb, with great advantage."

Here the "two or three grains of the latter," should certainly allude to the ipecacuanha, and not the tartrite of antimony, as expressed. Following the advice of the text might occasion some inconvenience to a child or person with a very feeble stomach.

The following passage deals in those "elementary truisms" for which the author is distinguished. In cases where worms exist in the alimentary canal, he observes, that he trusts to repeated small doses of aloes and calomel.

"I prefer these, because, as it appears to me, I not only produce the discharge of these animals with certainty, but they do not so readily again make their appearance. We know but little about these animals; but could we discover it, the object in treating them is evidently not only to procure their expulsion, but to correct, at the same time, the morbid condition which favours their production, and on which it may possibly depend."

Mr. Macilwain's little book is, however, by no means a bad one. The practice it inculcates is not only simple and safe, but calculated to be efficacious. He deserves special commendation for one thing, namely, dispensing with the

farrago of ointments and washes usually recommended in the treatment of the forms of porrigo, some of which are exceedingly dirty and disgusting, especially such as contain tar and sulphur. That many of the local applications often recommended are not only useless, but positively injurious, we fully believe, being in general too irritating and unsparingly used. The applications or treatment should never be such as would interfere with the healthy functions or conditions of the parts affected, and we fully concur with the author in the opinion, that unnecessary rudeness of manipulation, either in washing, shaving, or drying the head, will each contribute to render the disease more or less obstinate. The following advice upon this subject is highly judicious.

"The head having been shaved as close as the nature of the case may admit, should be washed with soap and water, until every particle of discharge be removed. The soap should next be entirely washed off by a liberal use of clean tepid water, and the whole surface patted, (not rubbed,) with soft linen until perfectly dry. I generally direct the head to be shaved about twice a week."

The ointment employed, which is generally the red precipitate, made at first of the strength of a drachm to an ounce of lard, and gradually increased, should be applied by means of a moderate sized camel-hair brush—

"With such an instrument the whole of the affected surface should be, as it were, lightly painted; the ointment having been previously conveniently softened by warmth, so that the diseased parts should appear as if lightly oiled by the application, and nothing more. The dressing should be repeated night and morning, with the same care to cleanse the surface of all matters, including the ointment previously employed. In some instances this frequent dressing seems to produce irritation; when repeating it once in twenty-four hours may be sufficient, especially if the renewal of the discharge be not very rapid or abundant."

We have indulged in a freer notice of this little treatise, from the belief that it will not be republished in this country. G. E.

XIX. *Sul Commercio Sanguigno tra la Madre et il feto Lezione di* Tommaso Biancini, Prosettore e Ripetitore di notomia umana nell' I. E. R. Univer. di Pisa, &c. detta all' Academia Medico-Fisica Fiorentia Nell' adunanza del di 9 Dicembre, 1827. Pisa, 1833. 8vo. pp. 78.

On the Sanguineous Connexion between the Mother and Fœtus. By Thomas Biancini, of Pisa, read before the Medico-Physical Academy of Florence at its Session of December 9th, 1827.

The mode in which the communication is effected between the blood of the mother and that of the fœtus, has given rise to very considerable controversy among the older writers on physiology. Although, even at the present day, our views in relation to the subject are so very imperfect and confused as to amount to almost entire ignorance; yet of late years it has elicited comparatively little attention. It still, therefore, remains one of those points in physiology, upon which the labours of the industrious investigator are calculated to throw much and important light.

The latest publication in relation to this subject, is the one now before us. It consists chiefly of the detail of various experiments undertaken with the view of determining the structure of the placenta, and the mode in which the blood

is conveyed from the pregnant uterus to the fœtus, and from the latter back again into the vessels of the mother.

We cannot certainly subscribe to all the views which the author has thrown out in the course of his remarks, a few of which do not appear to us to be clearly proved by the result of his experiments. The work is nevertheless highly interesting, and deserving of a careful and candid perusal.

From his experiments, twenty-four in number, M. Biancini conceives the following conclusions to be legitimately deducible.

1. The umbilical arteries communicate with the veins of the maternal uterus.

2. The communication between these two sets of vessels is effected by means of an intermediate series of large, straight vessels, to which, as they accompany the *utero-placental* arteries, and fulfil the office of transporting the blood, returned from the fœtus and placenta, to the vessels of the maternal uterus, the distinctive name of *placento-uterine veins* may with propriety be applied.

3. The placento-uterine veins are not to be considered as prolongations of those of the uterus; they are, in fact, a new formation resulting from the act of impregnation.

4. The umbilical arteries being continued into the placento-uterine veins, establish a direct communication between the venous blood of the fœtus and that of the uterus of the mother; while the utero-placental arteries, inosculating with the radicles of the umbilical vein, cause a similar communication between the arterial blood of the two.

5. The proper substance of the placenta is composed of ramifications of blood-vessels and a reticulated tissue, and is made up of the ultimate divisions and terminations of the vessels which unite the mother with the fœtus, and vice versa.

6. In the placenta there exists two circulations of blood; one, namely, of the blood proper to its own tissue, and another, of the blood destined for the nourishment of the fœtus. There is no difference, however, between these two portions of blood.

7. The arterial blood supplied from the vessels of the mother is conveyed to the placenta by the *utero-placental arteries*, which anastomose with the radicles of the umbilical vein; which latter performs the office of an artery.

8. One portion of the maternal blood is distributed to the proper tissue of the placenta, by means of the collateral ramifications of the utero-placental arteries and umbilical vein, and another is conveyed into the body of the fœtus by the principal trunk of the latter vessel. The blood, after being circulated through the fœtus, is returned back again to the placenta by the two umbilical arteries which perform the office of veins.

9. The blood, finally, returned from the fœtus, mixed with the blood returned from the placenta by branches of the umbilical arteries and the placento-uterine veins, passes immediately into the veins of the maternal uterus, through the principal trunks of the placento-uterine vessels.

The foregoing views require no comment. The several points in which they differ from the generally received opinions of modern physiologists will be perceived at once by our readers, all of whom are to be presumed conversant with the latter. The truth or falsity of M. Biancini's propositions can be determined only by a series of judicious and cautious experiments. D. F. C.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

ANATOMY.

1. *Case of Diverticulum of the Œsophagus.*—A merchant, æt. 54, during a meal, perceived that a mouthful of food, instead of passing on to the stomach, was arrested at a point in the œsophagus. From this time forward he experienced a sensation of pain whenever deglutition was attempted. The affection went on increasing, until the pain experienced after each repast was excruciating; and he was obliged in order to swallow his food, to cause it to regurgitate, and then rechew it, so that he might be said to have become in a degree a ruminant; a sound introduced into the œsophagus indicated the existence of an obstacle in this tube, which it was impossible to overcome. Although the patient swallowed a large quantity of food daily, but a small portion of it passed into the stomach, the rest being rejected after each repast; a large tumour appeared on each side of the larynx, which could be emptied by pressure, their contents being discharged partly into the œsophagus, and partly into the stomach. After nine years of suffering the patient at length died, his death being caused absolutely by hunger and debility.

Autopsy.—Upon dissection the cause of the symptoms manifested during life, was found to be a large pouch or diverticulum, which started from the œsophagus just below the transverse fibres of the inferior constrictor muscle of the pharynx. The orifice of the diverticulum did not equal in diameter the cavity of the œsophagus, but suddenly enlarging, terminated in a pouch three inches nine lines in length, one inch and three fourths in breadth, and about the size of a child's fist. The upper portion of the sac reached as high up as the middle of the thyroid cartilage, whilst the inferior portion extended as low down as the fourth ring of the trachea. The parietes of the sac were of some thickness, and composed of three distinct layers. The external one was cellular, and covered over with well-developed muscular fibres, which passed from the œsophagus to the diverticulum; the second, (mucous,) was thicker than the mucous membrane of the œsophagus and pharynx, and the third was formed by a continuation of the epithelium of the œsophagus. The sac when filled with food, was pushed forward upon the œsophagus, which it closed completely; the resistance offered by the cervical vertebræ to its dilatation posteriorly, being the chief agent in the production of this state of things. It was this which caused his death.—*Gaz. Med. Sept. 28th,* 1833, *from Rust's Mag. Vol. XXIX.*

2. *Case of Epispidia.* By Dr. Cramer.—In the autumn of 1828, during the levy of troops in Wesensee, I had an opportunity of examining a young man of 21, who had a remarkable malformation of the urinary organs. The urethra did not lie in its usual place beneath, but above, the corpus spongiosum, and was divided in its whole length from the arch of the pubes to its extremity: the

penis was of the natural length. The mons veneris was wanting, but in its stead there was a reddish skin, covered with a scaly cuticle, and destitute of hair. Beneath the pubal arch there was an opening, into which a finger might be readily introduced, so as to reach the isthmus. The glans was also divided, and the rudiments of a prepuce were observable about its root. When the margins of the fissure were brought together by pressing them on both sides, they were found to coincide pretty exactly. There was nothing apparently amiss with the scrotum and testes: and the animal passions were energetic, though the young man denied that he had ever had any sexual intercourse. His parents were healthy people, and none of his brothers or sisters ever had any deformity that he was aware of. It should be added, that this person laboured under incontinence of urine; and for the greater convenience of emptying the bladder, was in the habit of generally wearing a petticoat instead of breeches. Does not malformation of this kind belong to the hare-lip and cloven-palate species; and might it not be cured by similar means?—*Med. Gaz. from Hecker's Medicinische Zeitung.*

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3. *Congenital Malformation of the Brain.*—M. Deschamps communicated to the Royal Academy of Sciences at their meeting of 2d September last, a description of a case of this kind, different from any hitherto described. The subject of it was a man forty-three years of age, who died in one of the Parisian hospitals in consequence of an injury. The brain presented, 1st, a prolongation of the fissure of Sylvius to the superior face of the left hemisphere; 2d, two accidental distinct openings, around which the cerebral convolutions were folded, openings which established a communication between the periphery of the brain and the central parts; 3d, a trifid lobular division at the face of the upper hemispheres.—*Archives Générales, Sept.* 1833.

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4. *Displacement of the Orifice of the Urethra in a Young Girl.*—Dr. Otto has met with a curious instance of this in a girl labouring under typhus fever, and in whom paralysis of the bladder supervened. Upon attempting to introduce a catheter to evacuate the urine, although the fossa which usually leads to the orifice of the urethra existed, no orifice could be there detected. On further search the orifice was found at the inferior and interior part of the left labia pudendi.—*Heidelberger Klin. Ann.*

PHYSIOLOGY.

5. *Sympathy between the Uterus and Mammæ.*—The *London Medical Gazette* for March last, contains some observations by Dr. Rigby on this subject, which are peculiarly interesting from the practical advantage to be derived from the play of this sympathy in the suppression of uterine hæmorrhage. There is, perhaps, remarks Dr. R. "nothing more interesting, or more worthy the attention of an accoucheur, than the various sympathies which show themselves between the uterus and other parts of the system. The morning sickness of early pregnancy; the convulsions in the latter months, or during labour; the violent rigors when the os uteri becomes fully dilated, or immediately after the birth of the child; the contraction of the uterus when the face is sprinkled with cold water, or after a draught of any cold fluid; are some of the most remarkable, among a considerable number, which occur before and during labour.

"The connexion, in the unimpregnated state, between the uterus and stomach is well displayed by the gastric derangement which frequently accompanies prolapsus uteri, and *vice versâ*. The pain and swelling of the mammary gland from menstrual irritation, or where there is subacute or chronic inflammation, or organic disease of the uterus, in like manner demonstrate the link between this organ and the breast. But the most striking instance of sympathy which I have

remarked between these two organs, is the sudden and powerful contraction which is excited in the uterus, when in a state of inertia, by applying the child to the breast.

"My attention was first drawn to this subject by an observation which I met with some years ago in Carus's *Gynäkologie*, recommending the application of the child to the breast to promote expulsion of the placenta where it was slow in coming away; but I was far from being aware of the extent to which this sympathy really existed. In cases where there has been considerable disposition to hæmorrhage after labour, from non-contracted uterus, and where I have been afraid to leave the patient, lest flooding should come on in my absence, I have been for the last two years in the habit of ordering the child to be put to the breast as soon as her clothes, &c. were changed, and herself comfortably settled in bed, feeling that I thus diminished the chances there might be of any hæmorrhage occurring. It was not, however, till last year that I began to see the practical importance of this sympathetic connexion between the breast and uterus in its full extent. Having had two or three cases of severe hæmorrhage after labour, from uterine inertia, which had to a degree resisted all the common modes of treatment, and where permanent contraction could not be induced even by repeated injections of cold water and vinegar into the vagina, I determined to see what effect the application of the child to the breast would have upon the relaxed uterus, and was agreeably surprised to find the observation of Professor Carus confirmed in its fullest extent, firm and permanent contraction having been immediately produced in every case."

"When I first began," Dr. R. adds, "to use this plan of treatment in cases of inertia uteri after delivery, I was frequently startled by finding a sudden gush of blood, accompanied by a forcible discharge of coagula, follow almost instantly the application of the child; but soon satisfied myself, that so far from being a return of the flooding, it was merely the result of the uterus contracting firmly and expelling its contents.

"It is a common saying among nurses, that 'the child brings after-pains;' that is, when the child is first applied to the breast on the second or third day, as was formerly the custom, it was frequently followed by pretty smart after-pains which evidently resulted from the uterus being excited to contract and expel any coagula of blood which might be lodging in its cavity or sinuses. Hence, besides its beneficial effects in preventing any danger from hæmorrhage, the early application of the child to the breast is a valuable means of preventing much of that uterine pain and irritation which is apt to result from the presence of coagula, &c. in the womb, after labour.

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6. *Case of Vagitus Uterinus, before and after the Rupture of the Membranes.* By Dr. Heyfelder.—Whether it is possible for a child in the womb to breathe and cry, is a question which has been variously mooted by medical men, but has never till now been set at rest. I confess I used always to think that the cases we have on record of vagitus uterinus previous to the rupture of the membranes, were all fabulous; for it is quite unaccountable how, under such circumstances, the air necessary for breathing and crying can reach the fœtus. This day however, (the 23d of September, 1833,) my scepticism has been completely removed by the following case:—

The wife of a dyer, of the name of Holdevied, living in Gorheim, near Seigmaringen, a stout, well-made, healthy young women, aged 24, was in labour of her first child. The pains had lasted for 48 hours. On examination I found the abdomen regularly and firmly distended; the extremities of the fœtus were perceptible above the navel, towards the pit of the stomach; the orifice of the uterus was open to the extent of three inches, but the membranes were neither protruded in the intervals of, nor during the pains, which were not strong nor frequent. Immediately behind the membranes, however, lay the face of the child, in which, with my finger, I could distinguish the eyelids, the nose, and the mouth. So little liquor amnii was there present, that I at first thought there

was nothing between my finger and the features of the infant, and that the membranes must have been ruptured previously to my arrival; but upon further examining the lips, I found the presence of a foreign membrane, which prevented the entrance of my finger into the mouth: and I should add, that the mouth itself, as well as the other parts of the face, lay between the upper and middle apertures of the pelvis.

While making this observation, and particularly at the moment of touching the lips, I suddenly heard a noise—it was the cry as of a new-born child beginning to respire. All who were present, the midwife, the husband, and the patient herself, heard it as well as I did, and testified their great surprise. This occurred in the short interval between two pains. I now considered it adviseable to rupture the membranes, and did so, with proper precaution, immediately over the mouth of the child: *some* water was discharged, and the same cry which was already heard was repeated, but it was much more distinct, and continued longer than before. We heard it also soon after, for the third time, and not less clearly. The forceps were presently applied, and I succeeded, not without some little difficulty, in bringing into the world a pretty strong living infant.

Such a presentation as that in the foregoing case,—the parietes of the uterus not covering nor compressing the child's mouth,—must be peculiarly favourable for the occurrence of vagitus uterinus—at least *after* the rupture of the membranes. And it would seem that such a phenomenon can only occur where the pains are weak, and the contractions of the uterus not considerable. But I shall not enter into any hypothesis to account for the occurrence of vagitus *before* the rupture of the membranes: I would only say, that it seems to be analogous to the chirping of the chick in the egg, first noticed by Mende, and too often attested since to be now gainsaid. And might not the deficiency of water between the membranes and the child's face, together with the peculiar presentation of the latter, have materially favoured the vagitus in the case just related.—*Med. Gaz. from Medicinische Zeitung. of Berlin.*

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7. *Memoir upon the Structure of the Lymphatic Vessels. Read at the Medical Society of Emulation of Paris, at its Meeting on the 2d of October*, 1833. By Professor Mojon.—Dr. M. former Professor of Anatomy and Physiology at the Royal University of Genoa, has lately made some new observations upon the structure of the lymphatic vessels, which appear to be well worthy of the interest of physiologists. Having placed the lymphatic vessels upon a glass plate, and opened them through their entire length, Dr. M. has recognised, by the aid of the microscope, that which anatomists regard as valves or folds of their internal membrane, are in fact true sphincters. These sphincters are formed by circular fibres, which, diminishing at different points, the calibre of the lymphatic tube give rise to those nudosities which are remarked at their exterior. The contractions are still more visible when the lymphatics are injected with some liquid. They may also be observed very distinctly when this system is in an almost varicose state, as in subjects who have died with anasarca.

If the two ends of a varicose lymphatic be drawn in a contrary direction, these external nudosities disappear entirely, as well as the pretended internal valves.

Professor Mojon has observed, besides, that the fibrous membrane of the lymphatics, of which Mascagni has spoken with sufficient exactness, has longitudinal filaments from one contraction to another, much more numerous than the oblique. This crossing of the fibres forms a tissue like a kind of lattice.

The longitudinal fibres have their two ends attached to the transverse, which constitute, according to the views of the Genoese anatomist, the sphincters or contractors of the lymphatics. Thus the longitudinal fibres in contracting, draw one sphincter nearer to another, whilst the oblique fibres diminish the diameter. All these fibres, taking their point of support upon the circular fibres, dilate the superior sphincters by drawing the circumference downwards. By means of this physico-vital mechanism, the fluid which penetrates a lympha-

tic, irritates the portion of the vessel which it fills, which contracting upon tself, diminishes its cavity, and the fluid there contained is obliged to advance by thus successively traversing the open sphincter. This peristaltic motion is performed in the same manner as that of the intestines. This vermicular movement may be observed very distinctly in the lacteal vessels of the mesentery of animals, which are opened two or three hours after they have been well fed.

By admitting this organization of the lymphatics, the retrograde movement of the fluids contained in the absorbent system, admitted by Darwin and others, may be explained, which would be incompatible with a valvular apparatus.

If this system of vessels were valvular, why, says Dr. Mojon, when a lymphatic is opened in its whole length, does it never present but two parallel crescents from one space to another, one to the right, the other to the left, and never one and two halves? That, indeed, would happen often, if these crescents were true valves, like those of the veins.

The difficulty which is often met with in attempting to inject the lymphatic vessels in a contrary direction to the fluid, which passes through them, is owing to this; that the little pouches formed by the sphincters, and the relaxation of their parietes in filling them with the injecting matter, inflate them, and by that means close the opening of the lymphatic.

The observation several times repeated, that the different coloured fluids with which the lymphatic vessels are injected, never spread themselves either in the cellular tissue, or in the parenchyma of the viscera, unless by some laceration, induced M. Mojon to believe that these vessels had no patulous orifice, and that they took their origin from a cellular filament, which progressively became a villosity, an areolar spongiole, a capillary, and at length a lymphatic trunk. He also believes that the absorbent action of this system of vessels is performed by a kind of imbibition through the porosity of their most delicate branches, like a sponge. When once the liquid has penetrated by this kind of endosmose into the cavity of the smallest branches of the lymphatics, it advances into the larger trunks by a progressive and continued peristaltic motion up to the absorbent system.

Several French anatomists have lately repeated these experiments; they have obtained the same results.—*Journal de la Societe des Sciences Physiques et Chemiques, Nov.* 1833.

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8. *Contraction of the Uterus after Death.*—Dr. Trustedt relates in *Hecker's Journal*, the following case of this. "A woman who was under the care of Dr. Rudolphi died suddenly, at an advanced period of pregnancy, in consequence of an attack of febris intermittens apoplectica. Her death took place about four o'clock, P. M.; in an hour after which, she was removed from the bed and placed on some straw on the floor, covered with a sheet. A woman left in the room to watch the corpse, was, about midnight, greatly alarmed by hearing a noise proceeding from the part of the room where the body lay, and immediately alarmed the house, being persuaded that the deceased was coming to life. On examination, a full-grown dead child was found between the legs of the mother."—*Dublin Medical Journal.*

PATHOLOGY.

9. *On the Pathology of Typhus Fever.* By Professor Bouillaud.—It results, says M. Bouillaud, from the thirty-six cases of typhoid entero-mesenteritis, which were lately treated in the wards of the La Charité, that the inflammatory affection of the lower part of the small intestines, and especially of the clusters of the glandulæ Peyeri, constitutes really and truly the fundamental and essential element of the disease. In every instance, from the very commencement

of the morbid phenomena, the local symptoms have clearly indicated the existence of such a phlegmasia; and the typhoid state has been developed under the influence of the entero-mesenteritis, in the same manner as we see it supervene in certain cases of severe phlegmonous erysipelas, of phlebitis, &c. It would not be more reasonable to consider inflammation of the intestinal follicles and of the mesenteric glands as a simple consecutive effect of the typhoid state, than it would be to regard a phlegmonous erysipelas, in the course of which, typhoid symptoms were developed, as the result of these very symptoms. Such a doctrine would be, in truth, a "contre-sens," pathogenesis. We do not, indeed, deny that erysipelas may occur in subjects already labouring under typhus fever; all that we contend for is, that the obverse case, viz. where the erysipelas is formed before the explosion of the typhoid symptoms, is by no means uncommon, and the scope of our reasoning is obvious when we assert, that the entero-mesenteric phlegmasia is of an erysipelatous character. To those who gainsay our doctrines, we confidently challenge them to adduce a single well-recorded and well-authenticated case of acute inflammation of Peyer's, and of the mesenteric glands, which did not exhibit in its march and in its symptoms, local as well as constitutional, a most close analogy, if not a complete identity, with that disease, which has been most unfortunately designated by the appellations of fever, typhoid affection, &c. If it be true, as the Father of Medicine has predicated, that "naturam morborum ostendit curatio," another very potent argument may be adduced in favour of our pathological tenets, from the success of the remedial measures we adopt. These are eminently antiphlogistic. It may be said that some of the means, as the quinine and the chlorurets, (which were used in a few of the cases in the hospital,) are very far from being so; but who does not perceive that, at the period when we had recourse to these, the inflammatory affection had assumed what the ancients denominated a malignant, or rather a putrid character, and, therefore, required for its arrest the intervention of certain measures, superadded to those of a strictly antiphlogistic tendency? In the period of the malady to which we are referring at present, there is indubitably a focus of putrid decomposition, which, reäcting on the whole economy, induces great and important changes in the mass of the blood and other fluids, and to counteract the effects of which, a new and paramount indication arises—an indication which is best fulfilled by the use of the chlorurets, both externally and internally, and of certain tonics, especially quinine.

How agreeable it is to find out that the doctrines which we have taught and inculcated for so many years, are in accordance with the experience of some of the greatest men who have gone before us. The illustrious Sydenham, whose authority is so often misapplied and abused in the present day, has admirably pointed out the relations between the phenomena of malignancy or putridity, and certain sorts or shades of inflammatory action:—"Cujus de malignitate opinionis inventio, humano generi longe ipsa pyrri-pulveris inventione lætalior fuit. Cum enim hæ febres præsertim malignæ dicantur, in quibis intensioris præ cæteris inflammationis gradus conspicitur." The following case will illustrate my treatment of typhus gravior.

A man was brought to the hospital in the second week of typhus fever, and of such an aggravated character were all the symptoms, that we quite despaired of saving him. The prostration was extreme—the tongue, lips, and teeth covered with a black crust—breath very fetid—respiration exceedingly feeble—pulse minute, and very rapid—abdomen distended—slight diarrhœa—surface of the belly and chest exhibited several reddish patches and papulæ, (eruption typhoide.) The state of this patient positively forbad the employment of any depletory measures, and the only judicious indication seemed to be, to obviate the putrid symptoms by the use of the chlorurets in drinks, baths, and enemas. In three or four days there was a sensible amendment; a blister was applied on the calf of each leg, and ten grains of the sulphate of quinine sprinkled every

day on the excoriated surfaces. The diet was gradually rendered more nourishing, and consisted of broths, soups, fruits, and weak wine and water. This patient ultimately recovered.

Let the preceding case satisfy my opponents, that the same treatment is not uniformly, and to the same extent, followed, in my treatment of fever, without regard to the character of the symptoms, or to the constitution of the patient. By a judicious combination of antiphlogistic and antiseptic remedies, thirty-three cases out of thirty-six, admitted into our wards, were saved. Such success could not rationally be expected to result from a therapeutics, which inculcated the use of stimulants, purgatives, and emetics. At the commencement, indeed, of the malady, a purgative or an emetic may be administered with advantage; but if they be of drastic severity, or are frequently repeated, the enteritic evil must necessarily be much aggravated. What confirms me in this opinion is, that I know that M. Trousseau has lately abandoned the practice of giving frequent doses of Glauber's salt in dothinenteritis, [the entero-mesenteritis typhoide,] as recommended by his master, M. Bretonneau. At present he appears to be satisfied with the "medicine expectante;" for he gives nothing else but the white oxide of antimony, a substance very nearly quite inert; and yet he assures us, that his success of late has been very great in the treatment of cases of genuine typhus. No doubt much good may arise from merely abstaining from every thing positively injurious, and from not interfering with nature's own operations; but we think that even the late M. Dance, who was very sceptical as to the advantages of the common practice in fevers, could not have withstood such practical evidence as we have adduced in favour of the plan which was followed in the thirty-six cases, of which no fewer than thirty-three recovered.—*Journal Hebdomadaire.*

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10. M. Bouillaud *on Follicular Enteritis.*—The term "follicular enteritis" is to be preferred to the one formerly in use, "gastro-enteritis," on account of its more accurately indicating the nature of the existing lesion; for in many cases there is no inflammation of the stomach, the disease being limited to the mucous membrane, and especially the follicular apparatus of the small intestines; and besides, we see every day examples of genuine gastro-enteritis, unaccompanied with the symptoms of typhus fever. M. Bretonneau has lately introduced the term "dothinenteritis," or furuncular enteritis, and, although we cannot, with strict propriety, admit the furuncular character of the disease of the intestinal glands, the term is not a bad one. Follicular enteritis has the same meaning, and is more simple in its enunciation. The bizarre appellation of "ileo-dicliditis," in allusion to the seat of the disease in the ileum and ileo-cœcal valve, does not at all express the nature of the diseased change, but rather its mere habitat. M. Bouillaud is in the habit of employing the terms of adynamic or putrid entero-mesenteritis, and in order to localize the chief seat of the morbid change, adds occasionally a special, instead of the general prefix, thus, adynamic ileo-mesenteritis, &c.

Eighteen cases occurred in the service of M. B. at the La Charité, during the summer months, and of these, fifteen took place in men, and the remaining three in women. This striking difference is, no doubt, attributable to the more debauched and irregular lives of the former, and also to the circumstance of far more men coming to Paris, from the country or elsewhere, for subsistence; for, indeed, the greater number of the cases we see here, are in those who have resided but a short time in the city. Out of our eighteen patients, eleven had been only four months in Paris—four from six to twelve months—one fifteen, and another twenty months resident there. They were all under twenty-eight years of age. The season of the year, viz. during the months of June, July, and August, is that when the follicular enteritis is usually most frequently seen. It is always a difficult, and often an impossible thing, to trace the exciting cause of fever to any one specific agent or influence; and we shall be generally correct, if we enumerate, not one, but several, such as recent ar-

rival from the country, laborious and excessive work, unwholesome and acrid food, debauchery, exposure to the inclemencies of the weather, depression of spirits, &c.

The premonitory symptoms are, a greater or a less prostration, general uneasiness, anxiety, want of appetite, feeling of coldness over the surface, thirst, head-ache, and in many cases, some degree of purging and nausea, or even vomiting. The head-ache becomes more and more severe, accompanied with noises in the ears, appearance of flashes of light before the eyes, vertigo, stupor, so that questions are answered slowly and with reluctance, and in many cases with delirium. The features are void of animation, except when inflamed during the delirious paroxysm; the eyes become considerably sunk, the nose is sharpened, and the lips are black, and coated with a dark crust. The skin is always hot and dry—the gentlest perspiration is ever a most favourable symptom; for, in all the worst cases, there is a constant aridity of the surface, and only towards the latter stage is it bedewed with an offensive sickening moisture. In some cases, there is an eruption on different parts of the body; this may be either papular, exanthematic, or pustular. A very characteristic symptom of this fever when severe, is the position or decubitus of the patient in bed—he lies in one attitude, seemingly unconscious of all around him, and if he moves, it is rather like the rolling of a senseless mass than the voluntary act of an animate being. Complete coma, convulsions, twitching of the tendons, &c. are always very unfavourable signs. The tongue is generally smooth, dry, and red at the point and along the edges, in the early stage; a filthy, yellow-coloured, cheesy-looking crust covers it, and in the more severe cases, so completely parched is it, that it has the appearance of having been broiled. The lips, teeth, and mouth are invested with a filthy brown or black sordes, and the breath is offensively disgusting. The thirst is always great—sometimes excessive. The gastric irritation is by no means observed in most cases; thus, in our eighteen patients, six only experienced vomitings; and except in one case, there was not any tenderness of the epigastric region when pressed upon. Pressure on the abdomen, especially over the cœcum and ascending colon, produced pain in ten cases. In fourteen, there was well-marked meteorism, or inflation of the bowels; and the degree of this symptom was usually proportionate to the severity of the case. The involuntary discharge of the urine, especially if this be muddy, ammoniacal, and fetid, always prognosticates great danger. The almost uniform coëxistence of pulmonary disease deserves our serious notice; in fifteen of our cases there was acute bronchitis, indicated by a dry sibilant, or mucous sibilant râle; in two, severe cynanche existed, and in one a double pneumonia, which caused the death of the patient. The biliary apparatus was not much affected in the majority of the cases. Four of the patients died, and the following are the most striking necroscopic appearances found.

Serosity under the membranes of the brain; substance of the brain more highly injected than usual; consistence nearly normal. The stomach, in all cases, presented at one or more points arborizations of minute vascularity; the texture of the mucous lining was generally softened, and thinner than in health. The duodenum was but little affected. On examining the ileum, there were found, sometimes even from its very commencement, patches of distinct eruption, or of an intense vascularity, with intermediate portions of healthy surface; but these phenomena were always more distinct as we approached its lower or cœcal extremity; at first, or highest up, the glandulæ Peyeri and aggregated follicles were merely swollen and enlarged; then here and there they were found to be ulcerated, the little ulcers having thickened edges, and the subjacent cellular tissue being denuded; as we proceeded lower down, the glandulæ Peyeri became more developed, and around them, the single or isolated follicles were converted into aphthous-like ulcerations, with red, and even bloody borders; towards the extremity of the ileum, the gut was found to be actually riddled with these ulcerations, which were surrounded with the soft, pulpy, and inflamed mucous membrane. In one case, the surface of the ileo-cœcal valve,

and also of the cœcum, exhibited these last described appearances. The mesenteric glands, adjoining to the diseased portions of intestine, were red, hypertrophied, and softened. Most of the other viscera, as the liver, spleen, heart, &c. presented more or less ramollissement of texture, so that they were easily crushed between the fingers.

As to the *treatment*, it was in all cases of an antiphlogistic tendency—moderate, but not repeated venesection; the application of leeches upon the epigastric and cœcal regions, (the *average* number required for each patient was between sixty and seventy in all, or about sixteen at four different times;) in four cases, cupping was employed to subdue the bronchitic affection. In nine of the cases, blisters were used, sometimes to the thighs, at other times to the calves of the legs. In ten cases, the solutions of the chlorides, (which were first recommended in 1826, by M. Bouillaud, as valuable remedies against the intestinal disease, and the consecutive alteration of the mass of the blood,) were employed, either by the mouth, or in injections, or lastly, mixed with poultices, and applied to the abdomen. The bed-clothes also, of the patients were freely sprinkled with them.—*Med. Chirurg. Rev. and Journal Hebdomadaire.*

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11. *On Chronic Gastritis.** [Extracted from Dr. Stokes' Clinical Lectures.]—Chronic gastritis is an extremely interesting disease, whether we look upon it with reference to its importance, its frequency, or its Protean character. It is commonly called dyspepsia, and this term, loose and unlimited in its acceptation, often proves a stumbling block to the student in medicine. Dyspepsia, you know, means difficult digestion, a circumstance which may depend on many causes, but perhaps on none more frequently than upon chronic gastritis. In the great majority of dyspeptic cases, the exciting cause has been over-stimulation of the stomach, either from the constant excess in strong, highly-seasoned meats, or indulging in the use of exciting liquors. Persons, who feed grossly and drink deeply, are generally the subjects of dyspepsia; by constantly stimulating the stomach they produce an inflammatory condition of that organ. Long-continued functional lesion will eventually produce more or less organic disease; and you will find, that in most cases of old dyspepsia there is more or less gastritis. But let us go further, and inquire whether those views are borne out by the ordinary treatment of dyspeptic cases. When you open a book on the practice of physic, and turn to the article dyspepsia, one of the first things which strikes you is the vast number of cures for indigestion. The more incurable a disease is, and the less we know of its treatment, the more numerous is the list of remedies, and the more empirical is its treatment. Now, the circumstance of having a great variety of "*cures*" for a disease, is a strong proof, either that there is no real remedy for it, or that its nature is very little understood. A patient afflicted with dyspepsia will generally run through a variety of treatment, he will be ordered bark by one practitioner, mercury by another, purgatives by a third, in fact, he will be subjected to every form of treatment. Now, all this is proof positive that the disease is not sufficiently understood. What does pathology teach in such cases? In almost every instance where patients have died with symptoms of dyspepsia, pathological anatomy proves the stomach to be in a state of demonstrable disease. It appears, therefore, that, whether we look to the uncertainty and vacillations of treatment, or the results of anatomical examination, the case is still the same; and that, where dyspepsia has been of considerable duration, the chance is that there is more or less of organic disease, and that, if we prescribe for dyspepsia neglecting this, we are very likely to do mischief. I do not wish you to believe that every case of dyspepsia is a case of gastritis. This opinion has brought disgrace on the school of Broussais. His disciples went too far, for whether the gastric derangement depended on nervous irritation, or anæmia, or disease of the liver, or mental emotion, they prescribed leeches and water diet, and thus very often brought on the disease they

* For the treatment, see department of Practice of Medicine.

sought to cure. We may have functional disease, independent of structural lesion in the stomach, as well as in any other organ; it is no unusual circumstance, and the practical physician meets with it every day. A great deal of confusion, however, arises from the similarity of the symptoms. I remember an accomplished friend of mine getting into disgrace with one of the members of a board of examiners on this subject. He was asked to tell the difference between the symptoms of chronic gastritis and dyspepsia, and in reply stated that he could not. For this he was nearly rejected, but I believe, on a candid review of the circumstances, you will agree with me, that he knew more of the matter than the learned professor. In ninety-nine cases out of a hundred of chronic gastritis there is no fever, scarcely any thirst, often no fixed local pain, and this leads persons away from an idea of the existence of an inflammatory condition of the stomach. What are the symptoms of a chronic gastritis? pain of occasional occurrence, flatulence, acidity, swelling of the stomach, fœtid eructations, sensation of heat and weight about the epigastrium, and perhaps vomiting. Well, these are also the symptoms of dyspepsia, whether it be accompanied by inflammation or not. How then, when called to a case of this kind, are you to determine the point? I must mention to you here, that it is often hard to do this with certainty. There are two circumstances, however, which you should always bear in mind, as they will afford you considerable assistance in coming to a correct diagnosis; *first, the length of time which the disease has lasted;* secondly, the result of the treatment which has been employed. You will find, that where the disease is a chronic gastritis, that it has been of some duration, that it has come on in an insidious manner, and that it has been exasperated by the ordinary treatment of dyspepsia. Many persons think, that if you give a patient medicine, without regulating his diet or issuing a prohibition against full meals, that you can cure him, and that, as he has no fever, and can go about his usual business, there is no necessity for antiphlogistic regimen. But as the disease goes on, he complains of pain in the stomach during the process of digestion, feels uneasy after dinner, there is an unpleasant degree of fullness about the epigastrium, he also experiences a variety of disagreeable symptoms, sometimes being annoyed with pain in the chest, sometimes he says he feels it in the region of the heart, and sometimes about the cartilages of the eighth and ninth ribs. These symptoms subside after the process of digestion is completed, but during its continuance they harass the patient. Very often relief is obtained by vomiting, and hence some persons are in the habit of throwing up their food for the purpose of relieving themselves, and consequently can have no benefit by it. In some cases digestion goes on until the food seems to reach a particular point, and then an acute feeling of pain is experienced. In these cases the gastritis is generally circumscribed, and is likely to terminate in circumscribed ulceration. Various fluids are rejected from the stomach, during the course of a gastritis; sometimes acid, sometimes alkaline, sometimes insipid and sweet, sometimes bitter and bilious. There is generally a degree of fullness about the stomach, and the epigastrium is tender on pressure, but no decided tumour either of the pylorus, liver, or spleen, although the epigastrium presented that appearance of fullness and tension termed by the French "*renitence.*" The bowels, too, are constipated, and this is a matter worthy of your attention, for it sometimes unfortunately happens that the practitioner, mistaking the gastritis for simple constipation, goes on prescribing purgative after purgative, until the patient gets incurable disease of the stomach. I know a case of a lady who gets one stool a week by taking eight drops of croton oil. Some years ago, she was in the enjoyment of excellent health; her bowels happened to get confined, and she was treated by a systematic practitioner with continued purgatives; her bowels are now completely torpid, except when they are subjected to this unnatural stimulus. There are thousands of persons treated in this way, because practitioners look to consequences and not to causes.

There is one remarkable difference between acute and chronic gastritis, which deserves your attentive consideration, as it exemplifies a law applicable

to all viscera under similar circumstances, and this is, that the sympathetic irritations are not so frequent or so distinct in chronic inflammation as in the acute form, and hence, in a case of chronic gastritis, we almost never have fever, and the affections of the nervous respiratory or circulating systems are by no means so well marked. It may even go on to actual disorganization of the stomach, and yet the patient will not complain of any particular symptom during its whole progress, which you could set down as depending exclusively on the sympathetic irritation of gastritis. Some of these cases, called dyspeptic phthisis, by Dr. W. Philip, are most propably examples of the sympathetic irritation of the lungs from chronic gastritis. Another case, respecting which much error prevails, is what has been called hypochondriasis. Persons labouring under these affections are condemned to run the gauntlet of every mode of treatment, sometimes (and fortunately for themselves) they are sent to travel, sometimes they are treated with musk and antispasmodics, then with the mineral acids, then with purgatives and mercurials, and lastly with bark, nitrate of silver, and stimulants. They go about like spectres from one practitioner to another, trying remedy after remedy, alternately sanguine with hope or saddened by disappointment, until at last they die, and, to the astonishment of all the doctors, the only disease found, on dissection, is inflammation and thickening of the mucous surface of the stomach. A condition, which, under these circumstances, it was difficult to say whether it was the original disease, or produced by "*fair trials*" of a number of powerful agents. Hypochondriasis is not always gastritis; but it is now found, that in many cases it commences and terminates with disease in the upper portion of the digestive tube and the assisting viscera. This you must always bear in mind.

Chronic gastritis terminates in various ways. Sometimes the inflammation is limited to a particular spot of the stomach, and here we frequently discover circumscribed ulcerations. In very bad cases these ulcers go on perforating the various coats of the stomach, until at last the contents of that organ escape into the serous cavity of the abdomen, and the patient rapidly sinks under a fatal peritonitis. It does not follow, however, that, in all cases of perforation, the contents of the stomach get into the perineum, causing death. Very often adhesions are formed, and the base of the ulcer is the serous covering of some other portion of the digestive system, or a false passage may be formed into the colon. One of the most common terminations of a chronic gastritis is, that the inflammation extends to other viscera; the patient gets disease of the liver, spleen, peritoneum, or lungs, and sinks under a complication of disorders. It was somewhat in this way that Napoleon died. He laboured for a considerable time under chronic disease of the stomach, which seems to have been overlooked by his medical attendants, and this terminated in the extension of disease to various other organs.—*Lond. Med. and Surg. Journ. Jan. 25th*, 1834.

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12. *Spontaneous Perforations of the Œsophagus and Trachea.* By Dr. Albers, of Bonn.—These perforations may be arranged under several heads. Under the first may be comprised all those which commence in the pharynx, and finally ulcerate the parietes of the larynx or trachea. Dr. Albers adduces three cases of this description; two from Monro and Sandifort, and one from his own practice. The first symptom, and that which predominates at the commencement of the disease, is an extreme difficulty of deglutition. In one case the patient was obliged to push food into the œsophagus with a small stick; nevertheless it often happens that the ulcerated surface is so sensible, that the introduction of any foreign body whatever, instantly excites spasmodic contractions of the œsophagus, and the instantaneous expulsion of the food by the mouth and nostrils. Angina pharyngea always complicates these ulcerations of the œsophagus. It exists in all cases, and the constancy of this symptom gives it considerable value. At the same time there is excessive secretion of mucus, the patient experiences a continual desire to swallow, and the glands of the neck are singularly tumefied; there is usually no pain, except during the act of

deglutition. All these symptoms appertain to simple ulcerations of the œsophagus; but from the moment that this canal communicates with the trachea by a fistulous opening, there is cough, which daily becomes worse, impeded respiration, &c. The patient soon emaciates; swallowing becomes more and more difficult; the food is rejected with violent coughing, and the patient finally succumbs, often after three or four years, sometimes after a much longer period. In a single case, death occurred at the end of a year and a half.

The second species of ulceration is that which commences in the air-passages, and which perforates the alimentary canal. This is infinitely rarer than the first, and also differs from it in the rapidity of its march, and the violence of its symptoms. Those indicative of an affection of the larynx, give the first alarm. The alteration of voice, cough, and mucous expectoration, are at first moderate, especially when the ulceration is not seated exactly in the vocal organ. But the expectoration soon becomes purulent or bloody, swallowing painful, and subsequently the food is violently rejected the moment they come in contact with the part of the œsophagus corresponding to the part of the trachea which is the seat of disease. By the efforts to cough, purulent matter, striated with blood, and sometimes pure blood is expectorated. During or after these efforts, half-digested substances are vomited up by the patient, whose strength rapidly diminishes, and he dies asphyxiated by food, which finds entrance into the trachea. Baillie positively denies the occurrence of this mode of perforation; nevertheless we find in a dissertation by Dr. Kunze, entitled *De Dysphagiâ Commentatio Pathologica*, 1820, some examples, in which the observation of the symptoms, as well as that of the pathological relations, have proved that the air-passages were the primary seat of the disease.

Finally, there exists a third species of perforation, produced by a tumour of some kind opening both into the trachea and œsophagus. Dr. Albers reports two cases from his own practice of this species. The tumours may be of different natures. Sometimes they consist of new formations of fibrous masses, of cancers, sometimes simple abscesses situated between the œsophagus and trachea. The commencement of tumours of the first species are not ordinarily announced by any very striking symptoms. There is difficulty in swallowing, cough, and all the symptoms of compression of the trachea and œsophagus; but in proportion as the tumour increases, the compression becomes greater, cough and vomiting come on, and the patient perishes from consumption, or by hæmorrhages from the surface of the tumour, which sometimes fill the bronchi and trachea.

Abscesses are seated in the cellular tissue, uniting the œsophagus to the trachea, and they are sometimes developed with great rapidity. The great quantity of pus expectorated is the characteristic symptom of this abscess having opened into the trachea; the anterior symptoms are the same as those from other tumours.—*Rev. Méd. Aug.* 1833, *from Graefe und Walther's Journal, S.* 1. 1833.

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13. *On the Mechanism of the Production of Pulmonary Emphysema, and on some of the Effects of Chronic Bronchial Inflammation.* By David Craigie, M. D.—Ever since the publication of the work of Laennec, in which this variety of lesion received a distinct place and consideration, it has been too much the practice for teachers to represent, and students to regard, pulmonary *emphysema* as a primary lesion, and thereby to overlook entirely its true character, and its anatomico-pathological relations. Every case almost of *dyspnœa*, and almost all cases of what are commonly called *asthma*, have been since that time attributed to *emphysema* of the lungs; while the formation of *emphysema*, and the mechanism of its production have been very much, if not entirely overlooked. I have long and repeatedly had occasion to observe, and to impress on the hospital pupils, the fact, that *emphysema* is one only of many effects of the chronic form of *bronchitis*, and that it is only at a particular stage of the latter affection that the emphysematous distention takes place.

In the early stage, indeed, of *bronchitis*, there is simply a diffuse or spreading inflammation or congestion of the pulmonary mucous membrane, and after it has subsided under proper treatment, that membrane, both where it lines the bronchial tubes and pulmonary vesicles, sooner or later returns to its natural condition; while the calibre of these tubes, and the capacity of the vesicles is little or not at all lessened. Either, however, after repeated attacks, or long continuance of this disease, not only does the inflammatory process extend from the mucous membrane to the submucous or pulmonary filamentous tissue, but by its long endurance it renders the former thick, villous, and brownish-coloured, secreting either much viscid mucus, or mucus more or less tinged with blood, or even occasionally pure blood, and indurates and solidifies the latter by the extravasation of albuminous fluid; while the increased thickness of the membrane, and the swelling of the submucous tissue, encroach so much upon the area of the bronchial tubes and vesicles, as to diminish remarkably the capacity of these cavities.

This swelling, however, of the pulmonary mucous membrane and filamentous tissue is not general over the whole of the tubes, nor even over the whole of one tube, otherwise it would produce fatal *asphyxia*. But it in general takes place at certain spots in the course of the tubes more remarkably than at others, producing a species of stricture of one or more bronchial tubes in one or both lungs. The effect of this again is various, according to its degree, and according to the component systems and textures of the lung most affected. One of the most frequent effects of the presence of one of these constricted portions, especially if the membrane secretes much viscid mucus which requires to be frequently coughed up, is to obstruct the passage so much that expiration becomes either inadequate or is interrupted. As respiration consists, therefore, in alternate inspiration and expiration, if air has been either inhaled by this tube, or by some of the communicating ones, it cannot, during ordinary expiration, be easily expelled. The effect is, that the bronchial membrane and pulmonary vesicles are excited by their physiological properties to frequently repeated expiratory efforts; and as these are inadequate to expel the air from the lungs, the compression of the expiratory muscles necessarily, by forcing the portion of lung into smaller compass, compresses the air already contained in the vesicles beyond the constricted point. The air thus confined, after many repeated expiratory efforts, forces its way, by its own elasticity, through the delicate mucous membrane of the vesicles into the pulmonic filamentous tissue, and, when once there, it continues to spread rapidly in proportion to the obstruction in the bronchial tubes, and the difficulty of producing efficient expiration. It is then that the air contained in these vesicles renders the chest, when struck, preternaturally resonant; while the extreme difficulty of breathing, with the dry sonorous *rhonchus* or sibilism, indicate the laborious struggle which is made in the tubes, contracted by swelling, and obstructed, as they are, by adherent mucus,—to inspire and to expire in an efficient manner.

In this manner, therefore, bronchial inflammation, either by continuance or repeated attacks, tends to produce *emphysema* and its usual phenomena; and there are few cases of emphysematous distention of the pulmonic filamentous tissue which may not be traced to this cause. In the young, when labouring under hooping-cough, in the aged, after frequently repeated attacks of catarrh, and in the middle-aged after the continuance of bronchial inflammation, in a sub-acute or chronic state, *emphysema* is with equal certainty, and in equal perfection, produced. In the first case, indeed, as the bronchial symptoms subside, the tubes become more pervious, and expiration becomes so much freer and less interrupted, that the air ceases to be urged through the vesicular membrane, and that which had been already impelled into the pulmonic filamentous tissue is at length absorbed. But in the two latter instances, in which the thickening of the membrane either abates little, or continues unchanged, the emphysematous distention continues to increase, until it has attained an extent almost incredible to those unaccustomed to examine cases of chronic bronchial disease.

Emphysema, however, is not the only effect of this state of the bronchial tubes. The impracticability of inspiring and expiring completely in such a state of the lungs, which implies the absence of the most essential condition of respiration, viz. the frequent and incessant change of air in the bronchial tubes and vesicles of the lungs, interferes with the necessary changes in the blood of the pulmonary artery and veins, which, therefore, passes from the former vessel into the latter, much less completely aerated than it would be in the healthy state. In addition to this, as the motion of the blood through the pulmonary artery into the pulmonary veins is always more free, in proportion as the expansion of the lung by inspiration, and its collapse by expiration, is extensive; and as both the obstruction of the bronchial tubes by viscid mucus, and the swelled and congested state of the bronchial membrane and submucous tissue, prevent the branches of the artery and veins from freely expanding themselves, the motion of the blood through this order of vessels begins to be interrupted and retarded, and thus to induce a congested state of the whole pulmonary system, which not only adds to the *dyspnœa* and *orthopnœa* of such patients, but eventually terminates in dropsical effusion into the pulmonic filamentous tissue, into the cavity of the *pleura*, and even into the general cellular membrane. The pulmonic filamentous tissue is in general the first seat of this dropsical infiltration; and it is one of the most common changes recognised in inspecting the lungs of persons cut off by long-continued bronchial inflammation.

Chronic bronchial inflammations, further, by its influence in impeding respiration and the circulation of the pulmonary artery and veins, has an indirect tendency to induce disease of the heart. In consequence of the difficulty which the blood encounters in passing through the branches of the pulmonary artery, the trunk of that vessel becomes permanently distended; and the right ventricle, being also distended and incessantly excited to new contractions, becomes affected with hypertrophy, sometimes with dilatation, sometimes without; and in other cases it may be merely enlarged with extenuation of its walls. It is, I conceive, in consequence of the union of the two ventricles in the human subject, that this excessive distention and inordinate action, by being first confined to the right ventricle, gives rise to a similar inordinate action in the left ventricle, that the latter is often found in a state of hypertrophy in persons who have long laboured under chronic bronchial disease. The fact of the connexion is at least well established; and the wards presented few instances of bronchial disease in which the heart was not affected, and in most of the cases of disease of the heart, the bronchial membrane and pulmonic tissue had been previously affected.—*Edin. Med. and Surg. Journ. Jan.* 1834.

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14. *Death Caused by the Opening by Ulceration of a Blood-vessel in the Stomach.*—An instance of this has been communicated to the Anatomical Society of Paris by M. Monestier. The subject of the case was a man, seventy-eight years of age. On dissection, at the base of an ulcer, situated near the cardiac orifice of the stomach, an open vessel was discovered. A large quantity of coagulated blood was found in the stomach, and through the whole extent of the intestinal canal.—*Archives Générales, Jan.* 1834.

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15. *Vaccination.*—Two children were vaccinated by M. Brachet of Lyons. Ten days afterwards there being no appearance of the development of the vaccine disease, M. B. re-vaccinated these children. The day after this second vaccination, the punctures first made became inflamed, and the disease subsequently went through its regular course. The punctures made in the second vaccination dried and disappeared.—*Rev. Méd. August*, 1833.

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16. *Re-Vaccination of the Prussian Army.*—A circular, dated Berlin, March 15th, 1833, signed by — Von Wiebel, Chief of the Military Medical Staff, declaring that as the results of the re-vaccination of the army, as already affected, fully proves its necessity, it appearing that, in the guards alone, 1425 out of 2641 exhi-

bited the true vaccine pustule, the order, therefore, for re-vaccinating all recruits is made absolute, and the physician-in-chief of every division is required to procure and collect from all the several regimental surgeons, correct lists of all the men who have been re-vaccinated, as well as every circumstance coming under their observation, connected with the small-pox, and to report the same every year, at the end of February, to the Royal Military Council. This is followed by a statement, entitled "*Collection of the reported results of re-vaccinating the army.*" Whereas a number of individuals have been attacked with small-pox, and some have died in consequence, notwithstanding that strongly-marked scars unquestionably proved their having been vaccinated at an early age, it is, nevertheless apparent that, in advanced years, they still are liable to be infected; and that such is likely to be the age at which they can be admitted to military service. Hence, on the representation of this fact, by the chief staff physician, to the commander-in-chief of the army, an order was despatched, on the 26th of March, 1831, to all the medical officers of the army, for the re-vaccination of all the men who may appear to be possibly liable to suffer; as well as all recruits whatsoever, whether they have marks of previous vaccination or not. This order was attended to by the several corps which it reached, as far as could be effected, and with the following results. In the 3d corps of the army, being at Erfurt, in 1831, where the small-pox was raging, the 24th regiment of Infantry, and the Fusileers of the 20th, were re-vaccinated, and, out of 6020 men, 2354 exhibited pustules; among which more than one-eighth proved of the true vaccine character. In the 8th corps, 2784 were vaccinated, and 925 took; among which, also, about one-eighth proved true vaccine.

In 1832, 3942 of the 3d corps were vaccinated, and 1594 exhibited effects; but, as in the rest, somewhat more than one-eighth were true vaccine: in the 5th corps, of 3234 vaccinated, 2535 were affected in the aforesaid proportion. As yet, there are no accounts of the other divisions of the army, to which, however, the order has been sent and executed; the royal military chief being desirous that the whole army shall be placed in safety on this head. There being great doubts of the extent of this prophylactic measure, either from the possible failure of the original vaccination, or from the effect wearing out by time; at all events enough is established to prove the necessity of the measure; and it is notorious that, after the re-vaccination of the doubtful men, and the new recruits of the Fusileer Battalion, at Erfurt, not one became infected, although closely in contact with very many violent cases of the disease. The circular goes on to direct that a constant attention be paid to the re-vaccination of the recruits, and gives some minute military regulations for the purpose, demanding a regular return to be made as before mentioned, after the following manner:—1, name of the regiment; 2, place; 3, name of the men; 4, number; 5, if marked by previous vaccination (*a*) certain (*b*) uncertain (*c*) none; 6, the re-vaccination (*a*) regular effect, number (*b*) irregular, number (*c*) without effect, number; 7, repetition on those which failed, (*a*) with effect (*b*) without; 8, number of pustules going through their course; 9, account of cases occurring during the year, in spite of vaccination, (*a*) varicella (*b*) varioloid (*c*) small-pox; 10, general remarks.—*Lane's Monthly Archives from Rust's Magazin.*

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17. *Re-vaccination.*—The question of re-vaccination continues still to occupy much of the attention of physicians of France, not only in the capital, but in all the provincial towns of note. The Academy of Medicine has appointed a committee to examine all the doubtful points connected with the subject, before giving any decided judgment, and, from time to time, various communications are addressed to that body from practitioners residing in the provinces. Amongst the latter, M. Lunott, a physician residing at Bischwiller, has made several experiments, the results of which possess interest. Within a period of four years this physician has practised no less than 3600 vaccinations; and in the year 1832, when an epidemic variola attacked the canton, he had occasion to repeat the operation on several individuals—eighty-six persons of both sexes,

who had all been vaccinated during infancy, presenting themselves for a second vaccination. With the exception of one or two, their arms were marked with the vaccine cicatrix in a perfect form. The following table gives the results of the operation, which was performed by introducing the matter through seven or eight punctures on one arm only:—

		Perfect Eruption.	Incomplete Eruption.	False ditto.
Individuals re-vaccinated below 10 years of age..	12	0	5	7
From 10 to 20	36	5	12	19
From 20 to 30	32	5	12	15
From 30 to 40	6	2	2	2

The first column of this table, *(perfect eruption,)* embraces all the individuals in whom the pustules were developed three or four days after the operation had been performed, assuming the true character of the vaccine pustule, and following the same march, with this sole difference, that the duration of the secondary eruption was sometimes two days less than that of a true primary one. The formation of the pustules was always attended by a secondary fever, and they did not fail to leave a well-marked cicatrix behind them. The second column, *(incomplete vaccine,)* embraces those in whom the punctures were covered with pustules on the second or third day; but these always assumed an irregular form, terminated in a sharp elevated point, were filled with a dirty yellow serum, and faded on the sixth or seventh day, without being attended by fever, or leaving any trace on the arm. It is unnecessary to recur to the third column, as it gives only negative results.

Thus, from the preceding table, it clearly follows, that of eighty-six individuals who were re-vaccinated, twelve presented examples of a second eruption, so normal and perfect, that it was impossible to distinguish it from a true primary vaccine. Perhaps it may be here objected, that the first vaccination was imperfect and ill-done; but M. Lurott affirms, that two-thirds of these patients, at least, presented vaccine cicatrices so deep and well defined, as to leave no doubt of the efficacy of the primary operation, and we are entitled to conclude with him that these individuals exhibited examples of two distinct and perfect eruptions of vacciola.

As to the interval of time which elapsed between the two operations, and the results which follow from this portion of the table, M. Lurott observes, 1st, that before the age of ten years re-vaccination has never, in his hands, produced any thing but a false vaccine; he has never been able to develope a true and complete eruption when the interval between the two operations was so short; 2d, that above the age of ten years re-vaccination has, in a certain number of cases, completely succeeded. The proportion of cases in which the operation gave rise to a second eruption, seems in direct ratio with the interval which elapses between the first and second vaccinations; the longer the interval, the greater the chance of success. Thus, in some cases, the first vaccination which we perform, although perfectly well done, has only a preservative effect of a temporary nature, and is limited to a certain number of years. This seems to be the true solution of the question: but what is that limit? Here our answer cannot be so precise, for it varies according to individual constitution, but from the experiments of M. Lurott, the effect would seem to last for at least ten or twelve years after the first vaccination; but this is a subject which requires a vast number of experiments in different seasons and countries, before we can hope to arrive even at an approximate resolution.

A question proposed by the Academy, and which has not yet been satisfactorily answered, has also been investigated by M. Lurott, though in a limited manner, viz. Will the vaccine matter taken from the pustule of a secondary eruption produce a true primary vacciola? The author answers in the affirmative, on the faith of some experiments, one of which we quote, as it seems very decisive:—

Mademoiselle Bourguignon, nineteen years of age, who had been vaccinated

for the first time at the age of seven months, the traces of which were exceedingly well marked on both arms, was re-vaccinated in November, 1832. On the seventh day after the eruption, the left arm exhibited pustules of a complete eruption, a few drops of matter were extracted from these, and a portion was introduced on the same day into the right arm of a healthy child, four years of age. Six punctures were made. A quantity of virus taken from another child, who had been vaccinated for the first time, was introduced into the left arm of the same infant by an equal number of punctures. The boy, thus vaccinated in both arms, was brought to M. Lurott for examination on the seventh day. The vaccine pustules were equally perfect on both sides, but they were not quite so well developed on the right arm. The progress of the eruption, for both was exactly the same, and the cicatrices which remained, were as deep on one arm as on the other. The virus collected separately from both sets of pustules was afterwards inoculated into different individuals, and gave similar results.

From this and several other facts, which we may have occasion hereafter to lay before our readers, we are entitled to conclude that re-vaccination furnishes a matter as efficacious as that produced by a primary vaccination; indeed we have the analogy of small-pox to support this fact, for experience too often shows, that a varioloid may give rise to the development of a confluent small-pox, whether the individual be vaccinated or no. There is some foundation, therefore, for the opinion which begins to prevail among the public, that the preservative effect of vaccination is only temporary, at least in a certain number of individuals; but this, unfortunately, does not diminish its value as a prophylactic, for we have it in our power to repeat the operation whenever circumstances may seem to require it.

Were the statistical account of small-pox cases preserved by physicians on an extensive scale, we should soon have data enough to draw some certain conclusions, but this is not the case, especially in England, where questions of public health, (unless they happen at the same time to affect commercial interests,) are totally neglected by the government, and left to individual zeal or taste for investigation. The canton of Bischwiller comprises about 25,000 inhabitants, and of these the greater part has been from time to time vaccinated by physicians appointed under the government; the non-vaccinated may amount, perhaps, to one-thirtieth of the whole population. In 1832-3, small-pox broke out in this district, and attacked 439 individuals, of whom 93 were not vaccinated, and 346 were. If we examine these 439 patients with regard to their age, we find that 103 were less than ten years of age; 146 from ten to twenty; 156 from twenty to thirty; 34 from thirty to forty, &c.

The result to be drawn from this comparative statement of ages is interesting and instructive. In the first place we may remark, that the class embracing children below ten years of age, is the most numerous in a population, and contains the greater number of non-vaccinated individuals; yet the amount of patients in this class is one-third less than for the two following. Whence this difference? The answer must be drawn from the modifying effects of time on the preservative power of vaccination. During the eight or ten years which succeed the first vaccination, the preservative effect of the matter is most complete, and gradually looses its influence with succeeding years. After the age of thirty or thirty-five, the number of patients was comparatively insignificant, because after this age the disposition to contract small-pox is very feeble, and hence re-vaccination is not so necessary for those advanced a little in life, as for the young or adults.—*Lancet.*

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18. *Ulcerations of the Intestines cicatrized.*—M. Sedillot exhibited to the Anatomical Society of Paris, at their meeting of the 8th of August last, a portion of the intestine of an individual affected with dothinenteritis, from which he was convalescent, when he died from abscess of the elbow. Some of the plates of Peyer were perfectly cicatrized, and others partly so; in some places

the cicatrice reposed upon the serous tissue itself, the plates being entirely destroyed.—*Rev. Méd. Oct.* 1833.

19. *Note of a Case in which Thirteen Ounces of Cerebro-Spinal Liquid was Found.* By M. MONTAULT.—The subject of this case was a man sixty-eight years of age, who had always enjoyed good health. The 12th of June becoming intoxicated, as was habitual, he became delirious, with difficulty of moving. When he was admitted at the Hôtel-Dieu some days after, he was able to move all his limbs, but with little energy; his tongue was covered with a very thick, brownish crust; he had not entirely lost his faculties, but he gave a bad account of what he had felt; he was said to have a cerebral affection, the nature of which was not discovered, and he died the 19th, after having remained twenty-four hours in a comatose state. At the autopsy the only thing that was found to be wrong was that there were twelve ounces, seven drachms and a half of cerebral spinal liquid, and the membranes with which the liquid was in contact, were of a dull white colour and infiltrated. We do not know if it be proper to attach much importance to this anomalous quantity of cerebral spinal liquid. In a habitually healthy state, it appears that the quantity of this fluid varies from six to seven ounces in old men. The difference then is not as great as it would be at first thought, nevertheless it is a fact to be remarked, and perhaps some cases may be found resembling it.—*Journ. Hebdom. August*, 1833.

20. *New Theory of the Formation of Tubercles.*—At a late meeting of the Academy of Medicine, M. BRESCHET read an interesting report on this subject, of which the following is a *resumé*.

Various opinions have been promulgated on the formation of tubercles. Some regard them as products of inflammation; by others they are attributed to a peculiar action, which is not inflammatory; and some physicians refer the origin of tubercles to parasitical animals of the family called by M. Bory St. Vincent, *psychodiaires*.

M. Kuhn, of Niederbroun, adopts this latter opinion. According to him, tubercles are originally nothing but acephalocysts, and *tuberculization*, a name invented expressly, is the result of the destruction of these animals. The author of the present paper has chiefly studied the development of tubercles in the lungs, and employed for that purpose a microscope, magnifying nine or twelve times. When you extract with precaution one of those small granulations, of a gray colour, which abound in the lungs of certain individuals, and are the origin of tubercles, and place it under the focus of the microscope, having lacerated it, you see that it is composed of other granulations still smaller; and the lacerated substance seems to be composed of an innumerable number of small albuminous globules, connected to another by hyaline filaments, and the whole enveloped by a layer of mucus. Granulations, therefore, appear to be constituted by a filamentous apparatus, surrounded by globules in great number. The analogy is clear and striking between this structure and that of the mould which forms on paste, bread, &c.

This analogy, without doubt, does not amount to a demonstration; however, the ideas of the author, (says M. Breschet,) deserve peculiar attention; they point out the way to a new theory, and to the probable existence of a new class of beings which has not hitherto been suspected. When we examine the granulations with care, we find a great number which become opaque in different points; others are already half opaque; finally, some have become perfectly opaque in their whole extent.

These observations afford a strong argument against individuals who regard the granulations as totally foreign to the production of tubercles. Tuberculization commences in the centre of the granulation, and extends from the centre to the circumference. It is effected by the absorption of the mucous surrounding the granulation, which is converted into a substance composed simply of the globules and hyaline filaments. The tuberculization goes on more readily in

certain individuals than in others, and may go on to such a degree as to obstruct the lungs altogether, and produce death before the tubercles are perfectly formed. M. Kuhn has also examined, with the microscope, the expectorations of phthisical individuals. When the globules which float in the more liquid matter were separated, he found them equally composed of hyaline filaments, and of small viscid globes surrounded with mucous; thus there is a striking resemblance between the globules found in the spittle, and the gray granulations disseminated through the lungs.

From these several facts the author concludes:—1st. That pulmonary granulations are composed of globules and hyaline filaments, clothed with mucus. 2d. That they are analogous to parasitical animals found in other substances. 3d. That they may be converted into tubercles, although this change is not always necessary. 4th. That tuberculation is effected by the absorption of the mucus, and finally, that we find the elements of these granulations in the expectorated matter.—*Lancet, May 10th*, 1834.

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21. *On the Means of Preventing Scarlatina.* [Extracted from a Memoir presented to the Royal Academy of Medicine. By M. Miguel, M. D.]—Being convinced of the inefficacy of the hygienic and therapeutic means hitherto employed against the propagation of the scarlatina, the author of the present memoir was induced to make several experiments, from which he thinks himself justified in concluding "that the scarlatina, like many other analogous diseases, may be inoculated so as to determine a local inflammation which has little reaction on the economy, but is preservative in the same manner as the vaccine virus is against small-pox." As a preliminary measure the author made numerous experiments with the vaccine and variolic matter on adults and children, from which he deduces the following proposition, viz.:—that it is possible to localize often, if not always, those eruptive diseases which are capable of being inoculated, and that individuals subject to be affected are preserved by this process from subsequent danger of contracting the disease. Since, then, the scarlatina may be inoculated, why should it not follow the same laws as variola, &c. and be localized like them, with a preservative influence on the constitution? This was a theory worthy of investigation. M. Miguel therefore was desirous to put it to the proof, and in November, 1833, an epidemic attack of scarlatina, which broke out at Nazelly, afforded him an opportunity of making the following experiments.

Experiment 1.—A young girl, the child of Dennis Carron, fifteen years of age, presented an example of scarlatina in the most unequivocal form. On the fourth day of the eruption the author pricked several papulæ with four lancets. The incisions did not bleed, but a yellow matter was discharged, and adhered to the point of the instrument. This was carefully preserved, and the author immediately proceeded to the house of a nurse, where several children from the *Madeleine* of Tours had been placed. Several slight incisions were here made in the arm of an infant twenty-seven or twenty-eight months old, and the matter contained on the points of the lancets was introduced. On the following evening, that is, thirty hours after, the incisions began to exhibit a blush of redness. On the second day the redness was well marked, and continued to increase in intensity during three days. Each inflamed prick of the lancet resembled, on the fourth day, a commencing vaccine pustule. On the fifth day after the inoculation the inflammation had disappeared. There was no general fever, and the health of the little patient was not disturbed in the slightest degree.

Experiment 2.—Fifteen days after the date last mentioned in the foregoing case, the other children of Dennis Carron were affected with scarlatina. M. Miguel now received the matter on twenty-four lancets, as in the preceding case, and within an hour again inoculated the little child which was the subject of the former observation, in six different places. The incisions now made did not become red, or exhibit any sign of a morbid action taking place in the part. M.

Miguel after this proceeded to the house of another nurse, and inoculated three young children, by making six incisions of the charge lancets on the arm of each. These experiments gave rise to inflammation in the case of one child only, aged four years; three of the lancet pricks inflamed, and produced as many points, which followed the same march as in the case of Carron's child, already described. This new inoculation is regarded by the author as nearly decisive of the question, for if the inflammation which took place in the arm of the first infant was merely traumatic, why was it not renewed on the second application of the virus, and why in the latter experiment did eighteen incisions give rise only to the formation of three pustules, which, as in the case of the child twenty-eight months old, followed the march of a scarlatinous inflammation?

Experiment 3.—It now remained to determine whether this local affection was a preservative against the scarlatina. On the 18th of January, 1834, the author was called upon to see the child of a mason, named Bocé, affected with scarlatina anginosa of the most severe form. The disease had existed twenty-four hours. The man, his wife, and three children, inhabited one low, damp, ill-aired apartment, and it was impossible to separate the sick child from the others. M. Miguel had frequently observed, that when scarlatina breaks out in a family, the first case usually precedes the others by twelve or fifteen days; he, therefore, proposed on the third day to charge a lancet by making an incision on the forearm of the sick child, where the eruption was most abundant, and to inoculate the virus into the other children. The mother consented to this proposal, and, accordingly, ten incisions were made in the thighs of a little sister, nine years of age, with a charged lancet. The boy, aged about twenty months, was inoculated in six different points; the epidermis alone was raised up on the point of the lancet, as in vaccination. On the following morning the incisions made in the thigh of the little girl were transformed into as many black points, from dried blood, each surrounded with a small red areola. On the second day this areola was larger, and of a deeper red. On the third day, the inflammatory circle remained stationary, but the skin of this part seemed to have become a little thicker than natural. The inflammation resembled exactly, in form, colour, and tumour, a papula of scarlatina. On the fourth day there was no change, and on the fifth all trace of inflammation had nearly disappeared, the skin remaining only a little brown. There was no fever, nor enlargement of the axillary ganglia. As to the boy, five of the incisions only became swollen and red like those of his sister: they were somewhat more developed and of a deeper colour than her's, a circumstance that might be attributed to the greater tenderness and vascularity of the skin in this young subject. Since the 19th of January up to the 1st of April these children have inhabited the same chamber, and slept on the same bed with their sister. No precaution of any kind was taken to preserve them from contracting the infection, yet both have remained perfectly healthy, and free from any eruptive attack.

These facts, though not sufficiently numerous to decide a question of this kind, are not without considerable interest, and should engage physicians to report, on as extensive a scale as possible, the experiments detailed.

MATERIA MEDICA.

22. *Some Remarks on the Plant which yields the Cascarilla Bark.* By David Don, Esq.—There is reason to believe that many species of *Croton* afford a bark partaking more or less of the properties of cascarilla, and indeed this opinion is borne out by analogy with other genera among whose members similar qualities are generally found to prevail. It is a curious fact, however, that the *Croton cascarilla* of Linnæus possesses none of the sensible properties of cascarilla bark. The late Dr. Wright, whose knowledge of the medicinal

plants of Jamaica was unrivalled, appears to have been the first to determine this fact, and that the bark in question was derived from the *Croton eluteria*, of which a faithful representation will be found in Sloane's Jamaica, (vol. ii. t. 174. f. 2,) referred incorrectly by Linnæus to his *Croton glabellum*. The same opinion seems also to have been entertained by Linnæus himself, for in the first edition of his *Materia Medica*, the *Cascarillæ cortex* is mentioned as one of the products of *Clutia eluteria*, but he afterwards, as now appears on very insufficient grounds, altered his opinion in favour of a plant with which he was entirely unacquainted, except from the figure in Catesby's Carolina, (vol. ii. t. 46.) Of this plant, which he named *Clutia cascarilla*, he had then seen no specimen, and in the *Species Plantarum*, where it occurs for the first time, he has stamped it with the usual mark of an obscure species. Of *Clutia eluteria* he had a sample, from which he evidently drew up his description, in the *Amœnitates Academicæ*, although he confounded with it a Ceylonese plant, which he had taken up in the *Flora Zeylanica* from Hermann, and likewise two other totally different species, the first figured by Plukenet, which is *Croton micans* of Swartz, and the second by Seba, (*Thesaurus*, vol. i. t. 35. f. 3.) In the Lambertian Herbarium, there is a specimen from Curaçao exactly resembling the last-mentioned figure, which I should be inclined to refer to *Croton nitens* of Swartz. The specific character, which occurs throughout all Linnæus' works, of *Clutia*, or rather *Croton eluteria*, appears to refer entirely to the Ceylon plant, whose history is still involved in great obscurity.

Dr. Wright considered the Elutheria and Cascarilla barks as the produce of *Croton eluteria*, and this opinion is now pretty generally adopted by pharmaceutical writers; but I am disposed to regard them as derived from two distinct species, and I rather incline to the opinion of Boulduc, Spielman, and others, that the cascarilla bark is a production of the Spanish Main, for it does not appear that it ever was obtained from Jamaica, or even from the Bahama Islands, (from one of which the appellation Eluteria or Eleutheria is derived,) and it is now ascertained, from the recent observations of Messieurs Schiede and Deppe, that a bark, agreeing in every particular with the cascarilla bark of the shops, is collected extensively in the vicinity of Jalapa, at Actopan, and in the district of Plandel Rio, in the province of Vera Cruz, Mexico, where it is known by the names of Copalche or Quina Blanca. These gentlemen considered the plant at the time to be identical with the *Croton eluteria*, but although closely related, it is nevertheless essentially distinct from that species, differing in its broadly cordate, 5-nerved leaves, which are slightly peltate at their insertion, and of a more coriaceous texture. In *Croton eluteria* the leaves are ovate-oblong or elliptical, furnished with a solitary midrib, having obliquely transverse ramifications, and the base either obtuse or somewhat attenuated, but neither cordate nor peltate. The inflorescence is racemose, and in other respects nearly similar in both species. The tree grows to the height of twenty-five or thirty feet, is much branched, and clothed with a profusion of broadly cordate leaves, silvery underneath, and numerous clusters of white flowers. The bark is exteriorly of a gray colour, pale brown within, of an even fracture, possessing a strong aromatic flavour, and an agreeable bitter taste, and in other respects accords with the Cascarilla bark of the shops, for I have carefully compared samples of the bark sent by Messieurs Schiede and Deppe with others from the Apothecaries' Hall, and I think there cannot be a question as to their identity. To the Mexican species I would recommend the application of the name of *Croton cascarilla*, that of *Pseudo-China* given to it by Professor Schlechtendal, in his recent treatise on the subject, being in many respects objectionable, and leaving to the *Croton cascarilla* of Linnæus the more recent epithet of *linearis*, applied to it by Jacquin, being perfectly convinced of the identity of the latter with the Linnean *Cascarilla*, and that the distinctions hitherto relied on to keep them apart are of too trivial and variable a nature to be entitled to the importance which has been assigned them. The

specimen in the Linnean Herbarium appears to have been communicated by Philip Miller, and belongs to the West India variety, with narrower leaves, and consequently is what Jacquin meant by his *Croton linearis*. The glands at the insertion of the leaf, I observe, vary from two to four, although, in the specific character of *linearis*, they are stated to be uniformly two, and three in *Croton cascarilla*.—*The Edinburgh New Philosophical Journal, April*, 1834.

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23. *Febrifuge Properties of Salicine.* By M. Richelot.—The bark of the white, crack, and Huntingdon willow, was long ago employed in the treatment of ague with various success; but its power over the disease appeared to be very questionable. The first chemists who analyzed it discovered in it no alkaline principle similar to quinine or cinchonine, and it gradually fell into disrepute. Fontana, however, maintained the existence of a certain febrifuge principle, to which he gave the name of *Salicine*. His opinion has since been corroborated by Buchner, Rigatelli, and Leroux, the last of whom was the first to employ it in France. Numerous trials were made of it in various quarters, and, of course, from possessing the charm of novelty, its praises were sounded in no ordinary tone. Doubts, however, continued to be entertained, which were confirmed by the result of some trials made at La Charité by M. Pelletier, by which it appeared, that in his hands, *salicine*, though very bitter, seemed to be far less active than the principle of the cinchonas.

Dr. Richelot mentions the trials made by various of its supporters, the results of which appear to be altogether negative, while other experiments tended to show that it is possessed of no obvious febrifuge power. The doses given in these experiments, varied from six to twenty-four grains. With the view of settling the question, M. Andral instituted several experiments, the particulars of which are recorded by M. Richelot. Ten patients of different sexes, whose ages varied from seventeen to thirty-eight, were selected for the purpose, and, after considering the results of these, as well as all that has been mentioned by others, M. Richelot comes to these conclusions:—1st, *Salicine* appears really to possess febrifuge qualities, but in so small a degree that we ought not to hesitate a moment in preferring the sulphate of quinine. 2d, *Salicine* may be employed in any case where irritation or inflammation exists, contraïndicating the employment of the sulphate of quinine, in hectic fevers with periodical paroxysms and abundant diarrhœa, or where sulphate of quinine cannot be had. 3d, It is not only unnecessary but injudicious to employ it at the beginning in high doses. Six or eight grains administered between the paroxysms, on the same principles as sulphate of quinine, produce as good or even better effects than higher doses, though, if necessary, the doses may be increased.—*Edinburgh Med. and Surg. Journ. from Archives Générales, September*, 1833.

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24. *New Anthelmintic. Spigèle anthelmintique, or Arapabaca.*—In a short memoir on the virtues of the above-named plant, M. Noverre, physician at Martinique, has drawn the attention of practitioners to the *arapabaca*, as an anthelmintic which is infallible in its action, enjoys a sedative power, and is also possessed of a peculiar property, which admits of its being administered in all possible cases, without aggravating inflammatory symptoms, should they happen to complicate the presence of worms in the intestinal canal. This latter quality gives it an immense advantage over turpentine and other stimulant purgatives, which are at present so universally employed in worm cases; and has been recognised in the plant by all physicians who practise in Gaudaloupe, Cayenne, Martinique, and South America.

The "Spigèle anthelmintique," *arapabaca*, is an herbaceous annual plant, of the pentandria monogynia, growing in South America. The stem of the plant is round, and the leaf verticillated round the summit. It is commonly administered in the form of syrup, of which three spoonfuls are given to an adult, or to a child of three years old a tea-spoonful. At the moment of administration it is customary to add a spoonful of cold water and a few drops of lemon-juice.

The same dose is repeated for three days, and then a mild purgative is given. A singular effect of the medicine is sometimes the production of a slight amaurosis, when it is administered under the influence of solar or artificial light. Amongst the most remarkable properties of this remedy the author enumerates the following:—Its action is always efficacious: it is agreeable to the taste, and children always take it without evincing any repugnance. Enjoying a sedative property, it calms the nervous symptoms which so frequently complicate the verminous disorders of childhood. It is not calculated to produce or aggravate inflammation of the intestinal canal, and may therefore be administered in cases where most other anthelmintics are inadmissible. However, it is prudent not to administer it whenever there are any symptoms of cerebral congestion; for it is a narcotic acrid poison, and if given in too strong a dose, may occasion severe accidents. The action of the plant generally takes place on the second, or even the first day after its administration. The author supports this assertion by an enumeration of cases in which the efficacy of the remedy as an anthelmintic is fully established; and says, it is administered with confidence by all the inhabitants and practitioners of the Antilles and Martinique.—*Lancet, from Gaz. Méd.*

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25. *Active Principle of Sarsaparilla.*—M. Batka attributes the properties of sarsaparilla to a peculiar acid, to which he has given the name of parillinic. In the state of hydrate, this acid resembles fish scales; melted it might be taken for a resin. It reddens litmus paper, and dissolves in alcohol, from which it separates in a crystallized state by evaporation; it is very little soluble in cold water, but dissolves very readily in boiling water, to which it communicates the property of foaming. The chlorate of calcium and of mineral acids, such as hydrochloric acid, precipitate it in gelatinous flocculi. Nitric acid dissolves it without changing its nature. It forms with the alkalies soluble combinations, uncrystallizable, and which communicate to water the property of frothing, like the infusions of sarsaparilla. In order to obtain parillinic acid, M. Batka prepared an extract of sarsaparilla with pure alcohol, treated this extract with boiling water, which dissolves the parillinic acid, evaporated to dryness, and redissolved the residue by hydrochloric acid; the parillinic acid separates in flocculi, which he washes, and afterwards dries.—*Journal de Pharmacie, Dec.* 1833.

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26. *Extract of Guaiacum.*—M. Soubeiran has published in the January No. (1834,) of the *Journal de Pharmacie*, some observations on the extracts of guaiacum, which merit the attention of practitioners. The wood of the guaiacum is very resinous, and on the contrary contains but a very small portion of extractive matter and gum, which therapeutic experiments have not shown to possess very marked properties. It results that cold water dissolves but little of the guaiacum, and that it cannot be dissolved in any great quantity except by long boiling, during which the extractive matters dissolve in some degree the masses of resin which have been softened and detached by boiling. Hence we must conclude, that to derive any effects from watery drinks prepared with the guaiacum, this substance must be employed in large quantities, divided in very small pieces, and long boiled. The different formulæ recommend the extract of guaiacum to be prepared by decoction, and the resinous deposit which forms as the evaporation proceeds, to be carefully separated. It is evident from the above, that the extract thus obtained is entirely destitute of resin, that is, of the most active principle of guaiacum. It is better as recommended by the Geneva pharmacopœia not to separate the deposit which forms during the evaporation, but to divide it, on the contrary, in the extract by means of a small quantity of alcohol, or to use only the resin of guaiacum, or the decoction itself, which in fact is but a particular mode of obtaining the resin of the guaiacum diffused in an aqueous vehicle.

27. *Experiments on the Therapeutic Properties of Codeine.*—This new alkaline substance has been recently obtained from opium by M. Robiquet, and its therapeutic effects have been studied at Amiens by M. Barbier, surgeon to the *Hôtel-Dieu* of Amiens, who communicated some observations on them to a late sitting of the *Royal Academy of Medicine.* These efforts seem to establish the chemical specialty of codeine, differing as they evidently do from either opium or morphine. The codeine was administered in the dose of one or two grains. Like opium and all medicinal substances derived from that drug, codeine operates on the nervous system, but its medical influence seems very small on the brain; it makes no impression whatever on the spinal marrow or nerves derived from it, and its whole activity seems to be exhausted on the nervous plexus of the great sympathetic. Thus, in cases of gastralgia, characterized by pain in the epigastric region, and a sensation of burning about that part, with paleness of the countenance, anxiety, &c., condeine has quickly dissipated all the accidents which it is impossible not to refer to the nervous plexus of the great sympathetic. M. Barbier has also seen codeine produce considerable alleviation in cases were the tunics of the stomach were beyond all doubt degenerated. Codeine also produces sleep when given in sufficient quantity, but this sleep differs from that occasioned by opium; it is never accompanied by a sensation of weight in the head, dizziness, &c., nor does its administration ever give rise to cerebral congestion. M. Barbier has been convinced by the observation of several facts that codeine has no influence over the spinal marrow or its nerves. Many patients affected with the gastralgic pains already alluded to, had also neuralgic pains in the head, loins, thighs, &c.; the uneasiness about the abdomen was quickly relieved by the remedy, but the pains in the limbs, back, &c., remained unchanged. This occurred upon so many occasions as to leave no doubt on the subject. It is necessary to remark, that all the patients on whom the codeine was tried, had previously employed, without any benefit, the liquid laudanum of Sydenham. Codeine does not produce any apparent change in the exercise of the circulation or respiration, nor does it disturb the digestive organs or produce constipation. When applied to the skin, it has not given rise to any remarkable phenomena. In one case, two grains were applied to the surface of a recent blister, but the neuralgic pains for which the blister had been employed were not in the least alleviated.—*Lancet and Gaz. Méd. 8th March*, 1834.

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28. *First Effect of Cataplasms on the Skin produced forty-eight Hours after their Removal.*—A very interesting example of this is related by T. W. Chevalier, Esq. in the *London Medical Gazette*, of 5th of April last. The patient, when in a state of apoplectic insensibility, had mustard plasters applied to his feet, and their application continued forty-eight hours, because they produced *during that period* no *sensible* effect. They were then removed, and after a second interval of forty-eight hours, and after sensibility was restored, it was observed that the feet first became flushed and inflamed, and presently began to blister upon the soles, the heel, and the instep, to an extent which it was painful to witness.

There are probably few practitioners of any experience who have not witnessed ill effects resulting from the too long application of cataplasms and blisters, especially to patients whose consciousness is dull. The rule usually followed, not to remove sinapisms until they become extremely painful, or until the patients exhibit evidence of feeling them, and of keeping on blisters until they draw, cannot, in many cases, be too strongly reprobated. The worst ulcers, and the most difficult to heal, that we have ever met with, were produced by the patient following the instructions of their physician, to keep on the cataplasm as long as they could bear it.

"I have always observed," says Mr. Chevalier, "in the use of the mustard cataplasms, that its sensible operation on the skin, in unconscious patients, and in such as are suffering, at the time of its application, from *collapse*, is not by any means in direct proportion to the effects which it produces some days after

its removal; while, even in patients who can make known their complaints, the impression that will be made by such applications is not to be calculated from the visible and palpable irritation produced by them while applied.

"Besides extensive experience, much science is required to estimate, to any certainty, the consequences of an excoriating application, especially to the skin of young persons. The severest is the safest, as most likely to warn the ignorant practitioner of its imminent effects; but I have seen three children lying dead at once, from blisters kept on for twenty-four hours, because, in that time, they had not raised the cuticle; for when they raised it, which was as long afterwards, the integuments sloughed, and they all three died of the sloughing.*

"A common blister, applied to most persons for six hours only, will rise about the twelfth or eighteenth, although it has been removed at the end of the six; for the irritation, although not *sensibly* affected at that time, is really and effectually accomplished; and we may safely adopt it as a rule, that sinapisms, or any other excoriants, are not to be continued on the body according to their effect while thereon, but according to the general experience of our profession with respect to the irritation they afterwards produce, and that it is an error to continue their application after the period in which they may be reasonably expected to have insured the *future* blush, vesicle, or superficial mortification, expected from them; since, in awaiting their first notable operation on the skin, we may perhaps insure a greater degree of mischief than it is in the power of the ablest practitioner to allay or controul.

"It appears to me, that ignorance of this aphorism, (if I may so call the doctrine I have ventured to promulgate,) and ignorance of the facts on which it rests, have led to the many cruel deaths, inflicted even in this metropolis, not long ago, on patients who were *merely suspected*, or *pretended*, to be liable to internal diseases, removeable by external irritation. In the legitimate use of unguentum antimonii tartarizati, for example, we do not rub it in till the pustules appear, but for so many minutes, in expectation of their future development, and in due time they rise; but if we persevere too long in the infriction of that ointment, of St. John Long's nostra, sinapisms, or any similar remedy, the consequence may be fatal, as has been proved by facts equally notorious and deplorable."

PRACTICE OF MEDICINE.

29. *Treatment of Acute Gastritis.* By William Stokes, M. D.—We now come to treat of simple acute gastritis. Here there are three principal indications. One of these is to remove inflammation as speedily as possible. You cannot, as under other circumstances, leave this disease to nature; the organ affected is one of the utmost importance to life; and if you do not cut it short at once, a typhoid state comes on, to which the ordinary and efficient means of antiphlogistic treatment are inapplicable. The first indication then is to cut short the inflammation as speedily as possible. The next thing is to prevent the introduction of any thing into the stomach which will excite the physiological action of that viscus. You are aware that while the stomach is engaged in the process of digestion, its vascularity is very much increased, and that this, which in health is merely a physiological condition, is unaccompanied by any kind of danger. But in a state of disease it proves a source of violent excitement, and superadds very much to the existing inflammation. You must, therefore, be extremely cautious with respect to what enters your patient's stomach, and carefully remove every thing capable of adding to the excitement which

* "After the sloughing took place, those children were under the best possible care."

always attends gastritis. The third indication in the treatment is to modify and remove the sympathetic or secondary irritations.

Now I shall suppose that we have to treat a case of simple acute gastritis not produced by the swallowing of corrosive poison or indigestible food. Here we have a patient labouring under violent inflammation of one of the most important organs in the body; and the question is, are you to adopt the ordinary and usual mode of stopping inflammation by opening a vein in the arm? I must here state, that we are very much in want of a series of well-established facts to guide our practice on this point, and to inform us how far general bleeding is useful in acute inflammation of the stomach. At the present period, the question is by no means settled, and the practice is uncertain. I believe, however, that when we are called in at an early period of the disease, where the patient is young and robust, the stomach previously healthy, the fever high, and the pain great, we may have recourse to general bleeding with advantage; bearing this in mind, however, that you are not to expect to cut short the inflammation by the use of the lancet. Inflammations of the mucous membrane of the stomach and bowels, and perhaps of the lungs, are not to be overcome at once by the lancet; the only cases in which you can expect to cut short an inflammatory attack are those in which the parenchymatous tissue of an organ, or its serous membrane, is affected. This is a general and important law. You will often be able to cut short a hepatitis or a pneumonia by a single bleeding, but you will not by the same means be able to repress a bronchitis or an inflammation of the mucous membrane of the intestines. If you bleed in gastritis, bleed at an early period; not too largely, or with the expectation of cutting short the inflammation, but in order to prepare your patient for the grand agent in effecting a cure—local bleeding. This is the principle on which you are to employ the lancet.

In the treatment of gastritis there is nothing more useful, nothing more decidedly efficacious, than the free and repeated application of leeches, whether the case be idiopathic, or produced by the swallowing of a corrosive poison. In this treatment of acute gastritis, you will frequently see, perhaps, the most striking instances of the rapid and decided utility of medical treatment; you will see the vomiting subside almost immediately, the epigastric pain and tenderness disappear, the cough and head-ache relieved, the fever subside, and the tongue change after the application of leeches. To remove the symptoms, the best and most effectual means are leeches; and these must be applied again and again, according to the duration and obstinancy of the symptoms. Here I wish to make one remark of importance. From an opinion very prevalent in former times, that pain and inflammation were inseparable, the older practitioners thought that when the pain ceased the inflammation also ceased; and hence many of our predecessors, and I fear some of our contemporaries, never think of reäpplying leeches, no matter what the existing symptoms may be, if pain has been relieved by the first application. Nothing is more erroneous than this practice. It frequently happens that the pain and epigastric tenderness are removed by the first application of leeches, but the breathing is still quick, the fever high, and the thirst ardent. So long as these symptoms remain, the inflammation of the stomach is still going on. The mere subsidence of pain or tenderness of the epigastrium should never prevent us from resorting to the application of leeches. In leeching the belly for inflammation of the stomach or bowels, it is a common practice to apply a poultice over the leech bites, with the view of getting away as much blood as possible. I am not inclined to approve of this practice. The weight of a poultice is frequently troublesome, and the heat produced by it disagreeable; the patients desire cold, and for this purpose they will often throw off their bed-clothes, feeling a degree of relief from exposing the epigastrium to a stream of cool air. Some practitioners have applied pounded ice over the stomach with good effects, as we see it frequently applied to the head with the same results in cases of ence-

phalitis. Again, the application of poultices causes an oozing hæmorrhage, the amount of which it is impossible to calculate, which is often hard to be arrested, and which, in debilitated persons and children, has the effect of lessening the powers of life without removing the original disease. It is much better to leech again and again than to do this. Where there is not much epigastric tenderness you may apply a cupping-glass over the leech bites with advantage, as you can get away as much blood as you choose, and the tendency to after-hæmorrhage from the leech bites is diminished by the application of the cupping-glass. In very young subjects the tendency to obstinate hæmorrhage from leech bites is so great, that many practitioners are afraid to use leeches, and I believe some children have been sacrificed to this fear. The best mode of managing this is, if the leech bites cannot be stopped by the ordinary means, (and in very young children they seldom can,) to stop them at once by the application of caustic. Do not lose time in trying to arrest the flow of blood with flour, or lint, or sticking plaster; wipe the blood off the bite with a piece of soft dry lint, plunge into it a piece of lunar caustic scraped to a point, give it a turn or two, and the whole thing is settled; and you can generally go away with the agreeable consciousness of having prevented all further danger, and without being uneasy lest your patient should bleed to death in your absence.

With respect to the management of the bowels in acute gastritis, a few observations will suffice. You will always have to obviate the effects of constipation; both in the acute and chronic form of the disease there is always more or less constipation; in fact, the same condition of the bowels is generally observed in both. Now, if you attempt to relieve this constipation in acute gastritis, by administering purgatives, you will most certainly do a vast deal of mischief. Nothing can exceed the irritability of the stomach in such cases; the mildest purgatives are instantly rejected, even cold water, or effervescing draughts are often not retained, and a single pill or powder is frequently thrown up the moment it is swallowed. Under such circumstances, it is plain that the administration of purgative medicine is totally out of the question. Even though the stomach should retain the purgative, you purchase its operation at too dear a price; for it invariably proves a source of violent exacerbation, kindling fresh inflammation in an organ already too much excited. In this state of things the best thing you can employ to remove constipation is a purgative enema, repeating it according to the urgency or necessity of the case. Where there is no inflammation in the lower part of the intestinal canal, you may employ injections of a strong and stimulating nature, with the view not merely of opening the bowels, but also of exercising a powerful revulsive action. I shall mention here an interesting fact, proving that stimulant injections have a decided revulsive effect; and that their influence extends not only to other portions of the intestinal tube, but also to distant parts of the system. In South America, where, from the heat of the climate, and the prevalence of bilious affections, sick head-ache is a very common and distressing symptom, a common mode of cure is to throw up the rectum an extraordinary enema, composed of fresh capsicum, and other aromatic stimulants. The irritation which this produces acts as a very efficacious and speedy revulsive, causing the almost immediate removal of the cerebral symptoms.

In those cases of gastritis, where not only purgatives, but even the mildest substances are rejected, the plain common sense rule is to give nothing. Where cold water is borne by the stomach, it may be taken in small quantities, as often as the patient requires it. Solid ice, too, may be given with decided benefit. There is a mistake which prevails with respect to the employment of ice in gastritis, which I wish to correct. Some persons object to its use, and reason in this way:—persons who have taken a quantity of cold water, or ice, when heated by exercise, have been frequently attacked with gastritis and fever, and consequently the use of these substances must be attended with danger in case of gastric inflammation. This, however, is false reasoning; you need not be afraid to order your patient ice ad libitum; depend upon it, there

is no danger in employing either ice or cold water in gastritis. There is nothing so grateful to the patient as ice. Let a quantity of it be broken up into small pieces about the size of a walnut; let your patient take one of these pieces, and having held it in his mouth for a few moments to soften down its angles, let him swallow it whole. The effect produced by this on the inflamed surface of the stomach is exceedingly grateful, and the patient has scarcely swallowed one portion when he calls for another with avidity. It will be no harm, gentlemen, if I should here mention to you a secret worth knowing. There are few things so good for that miserable sickness of the stomach, which some of you may have felt after a night's jollification with a set of pleasant fellows, as a glass of ice; Byron's hock and soda-water are nothing to it.

After the first violent symptoms of the disease have been subdued, I believe the very best thing which can be given is cold chicken broth. The point which we are always to keep in view is to remove inflammation from the stomach, and this should regulate the use of every thing taken into the stomach. I believe we might derive much advantage from anodyne injections in gastritis. I cannot say that I have ever employed them in such cases; but if I were to reason from their utility in other forms of abdominal inflammation, I should be induced to look upon them as entitled to some consideration. There is another point to which I will briefly advert. In the treatment of acute gastritis, there is nothing more commonly used than effervescing draughts; yet I have frequently seen them produce distinct irritation of the stomach. In cases where gastric irritability is excessive, I would not advise you to give effervescing draughts, or if you do, watch their immediate effect; see how the first one has agreed with the stomach before you venture to give any more. Patients labouring under this disease should be kept extremely quiet, as frequently a slight motion brings back the vomiting. Every thing which is swallowed should be in small quantity; a large quantity of any substance frequently causes a return of the vomiting, by distending and irritating the stomach. One of the best things you can give, and the best way of giving it, is iced lemonade, giving a table-spoonful from time to time. The extremities, which are generally cold in cases of intestinal disease, should be swathed in warm flannel.

I shall mention here a rule which should be carefully observed in the after-treatment. A patient has recovered from the violent symptoms of the disease; the fever, thirst, pain, epigastric tenderness, and sympathetic affections have subsided; but he still is confined to bed, and in a state of great debility. Some patients under these circumstances have been unfortunately lost by allowing them to sit up in bed, or on the night chair. The nurse will sometimes, through ignorance, suffer a patient, thus enfeebled, to risk his life by sitting up in bed; sometimes during the course of the night she is overcome by sleep; the patient has a call to empty his bowels; and not wishing to disturb her, attempts to get up, and is found in some time afterwards sitting on the night chair quite dead. This is an unfortunate termination for the physician, as well as the patient. A German author, Hoffmann, has written a treatise on the danger of the erect position after acute diseases; and in the course of the work, which is a very interesting one, he cites numerous instances of its bad effects. Not very long since, a patient was lost in the Meath Hospital by the nurse allowing him to sit up after a severe attack of enteritis. Such also was the melancholy cause of death in the case of the late Mr. Hewson, one of my best and earliest friends. He got a severe attack, which was subdued with difficulty, and his convalescence was doubtful and protracted. One night, in the absence of his attendant, he got up for the purpose of emptying his bowels, and was found some time afterwards on the night chair nearly dead. He was immediately brought back to bed, and the necessary means employed to relieve him, but without much benefit, for he never recovered the effect produced on his debilitated frame.—*Lond. Med. and Surg. Journ. January 18th*, 1834.

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30. *Treatment of Chronic Gastritis.* By WILLIAM STOKES, M. D.—[Extracted

from Lectures on Practice of Medicine.]—The first thing you should do, when called to treat a case of dyspepsia, is to ascertain whether it be a purely nervous disease, or a chronic gastritis. The majority of practitioners give themselves no trouble about this matter, not recognising the fact, that, of the number of dyspeptic persons who seek for medical advice, a considerable proportion are really labouring under a chronic gastritis, and forgetting that in consequence of long-continued functional injury, what was at first but a mere nervous derangement may afterwards become complicated with organic disease. You must also bear in mind, that the stomach is perhaps placed under more unfavourable circumstances for bringing about a cure than any other organ, because the life of the individuals demands that the stomach, though in a state of inflammation, should still continue to perform its functions. In treating diseases of other organs, you will have the advantage of a comparative state of rest, but in a case of the stomach, if you wish to preserve life, you cannot prohibit nutriment, and consequently you must run the risk of keeping up these periodic vascularities which its condition requires, which, though harmless in health, become a source of evil when the stomach is diseased. The obvious deduction from this is, that the cure of a chronic gastritis depends as much upon regimen as upon medical treatment, and particularly where the symptoms have arisen from long-continued excitement, as in the case of persons who live highly. Here the treatment chiefly depends on regulating the diet, and if your patient has sense enough to live sparingly for a few weeks or months, you may be able to effect a cure without other treatment. The great error is, that most practitioners attempt to cure the disease by specifics, and when these fail, they then go to the symptomatic treatment, prescribing sometimes for acidity, sometimes for nausea, sometimes for flatulence, sometimes for constipation, or "the liver," or debility.

You should be careful in the examination of such cases, and should try to ascertain, whether these symptoms may not depend upon inflammation of the stomach; for as long as the patient is in this state, the less you have recourse to symptomatic or specific treatment the better. It is hard to mention one single medicine which in this state will not prove stimulant, and if the stomach be unfit for stimulants, it must be unfit for the generality of medicines. There are numbers of cases of persons labouring under chronic gastritis, which have been cured by strict regulation of diet, and by avoiding every article of food requiring strong digestive powers. We find that articles of diet vary very much in this respect; some are digested with ease, some with pain. We might express this otherwise, by saying, that some require very little excitement of the stomach, and others very great vascular excitement. Patients in this irritable state of stomach, can scarcely bear any kind of ingesta; and when you consider the great vascularity, thickening of the mucous membrane, and tendency to organic disease, you will be induced to think that every thing entering the stomach should be of the mildest kind, and not requiring any powerful determination of blood to that organ.

If you continually prescribe for symptoms, neglecting or overlooking the real nature of the disease, giving arsenic to excite the system, and iron to remove anæmia, and bitter tonics to improve the appetite, and alkaline remedies for acidity, and carminatives to expel flatus, you will do no good; you may chance to give relief to-day, and find your patient worse to-morrow; and at last he will die, and you may be disgraced. On opening the stomach after death, you are astonished to find extensive ulceration, or perhaps cancerous disease. Very often, in such cases, practitioners say that it is cancerous disease, and that no good can be done. But the thing is to be able to know, when you are called to a case, whether it is a case of mere nervous dyspepsia, or chronic inflammation of the stomach. Some of the best pathologists think that most of the cancerous affections of the stomach are in the beginning only chronic inflammations of that organ.

I believe we have not yet in this country adopted the plan of moderate ap-

plication of leeches to the epigastrium in cases of chronic gastritis. I have seen in many cases great benefit result from the repeated application of a small number of leeches to the epigastrium, at intervals of two or three days. Here is a point which you will find very useful in practice. You will meet with cases which have lasted for a long time; cases where there is strong evidence of organic disease, and which have resisted the ordinary dyspeptic treatment. You will be called frequently to treat these three different cases, where the disease has been of long duration, where there is distinct evidence of organic disease, and where the disease has resisted the ordinary dyspeptic treatment. Here is a case of a patient labouring under what is called indigestion, and which has resisted the stimulant, and tonic, and purgative treatment.—Here is one fact. In the next place, the disease is chronic, and the probability is, that there is inflammation, and consequently that there is chronic gastritis. Now if, in such a case, you omit all medicine by the mouth, apply leeches to the epigastrium, keep the bowels open by injections, and regulate the diet, you will often do a vast deal of good. I have seen, under this treatment, the tongue clean, the pain and tenderness of the epigastrium subside, the acidity, thirst, nausea, and flatulence removed, the power of digestion restored, and all the symptoms for which alkalies, and acids, and tonics, and purgatives were prescribed, vanish under treatment calculated to remove chronic inflammation of the stomach.

What is next in importance to regulated regimen and local bleeding?—A careful attention to the bowels, which in chronic gastritis are generally constipated, and this has a tendency to keep up disease in the upper part of the digestive tube. Is this to be obviated by introducing purgative medicine into the stomach?—No. If you introduce strong purgative medicine by the mouth, you will do a great deal of mischief. You must open the bowels by enemata, or if you give medicine by the mouth, by the mildest laxatives in a state of great dilution. A little castor oil, given every third or fourth day, or a little rhubarb with some of the neutral salts, will answer in most cases. The diet, too, can be managed, so as to have a gently laxative effect. The use of injections is, however, what I principally rely on. I have seen many cases of gastritis cured by the total omission of all medicine by the mouth, by giving up every article of food which disagreed with the stomach, and by the use of warm water enemata. I have seen this treatment relieve and cure persons whose sufferings had lasted for years previous to its employment, and who had been considered by eminent practitioners to labour under organic disease of an incurable nature. It is important that you should bear this in mind. The old purgative and mercurial treatment of gastritis, I am happy to say, is rapidly declining; and British practitioners are now convinced, that they cannot cure every form of dyspepsia by the old mode of treatment. I do not deny that many diseases of the digestive tube may be benefited by the mild use of mercury and laxatives, but I think I have every reasonable and scientific practitioner with me in condemning the unscientific routine practice, which was followed by those who took the writings of Abernethy and Hamilton for their guide. I do not say that, where cases of gastric inflammation, treated after the plan of Mr. Abernethy, have proved fatal, the medicines have destroyed life; I merely assert that the patients died of inflammation, over which these medicines had no controul; and the error lay in mistaking and overlooking the actual disease, as much as in its maltreatment. You will find some practitioners, (they are becoming fewer in number every day,) who seem to have but two ideas, the one a purgative, the other a pot full of fæces; but the connecting link,—the gastro-enteric mucous membrane,—that vast expansion, so complicated, so delicate, so important, seems to be totally forgotten. But practitioners are now beginning to see that purgatives are not to be employed empirically; that they should be administered in many cases with great caution, and with a due attention to the actual condition of the alimentary canal, and that they have been a source of great abuse in the medical practice of these countries.

Next to leeching and a proper regulation of the bowels is the employment of gentle and long-continued counter-irritation over the stomach. This may be effected by the repeated application of small blisters, or by the use of tartar emetic ointment. I have been in the habit of impressing upon the class, that the tartar emetic ointment used in these countries is too strong, the consequence of which is an eruption of large pustules, which are excessively painful, and often accompanied with such disturbance of the constipation as amounts to symptomatic fever. In fact, tartar emetic ointment of the ordinary strength produces so much irritation, that few patients will submit to it long. The form which I recommend you to employ is the following:—Take seven drachms of prepared lard, and instead of a drachm of tartar emetic, which is the usual quantity, take half a drachm, directing in your prescription, (this is a point of importance,) that it be reduced to an impalpable powder; and you may add to it what will increase its action, one drachm of mercurial ointment. This produces a crop of small pustules, which give but little pain and are easily borne; and the counter-irritation may be kept up in this way for a considerable time, by stopping for a few days, until the eruption fades away, and then renewing the friction. I have often seen the utility of this remedy exemplified in cases of chronic gastritis, where the symptoms of gastric irritation, which had subsided under the employment of friction with tartar emetic ointment, returned when it was left off, and again vanished when it was resumed. The case of the celebrated anatomist, Beclard, furnishes a very remarkable proof of the value of a well-regulated diet and repeated counter-irritation in the treatment of this disease. While he was engaged in the ardent prosecution of his professional studies he got an affection of the stomach, which he considered to be a chronic gastritis, and immediately put himself under a strict regimen, using at the same time repeated counter-irritation. He kept up the counter-irritant plan for a considerable length of time, for he found that, when he discontinued it, the gastric symptoms had a tendency to return. In this way he got completely rid of the disease. Several years afterwards he died of an attack of erysipelas; and on opening his stomach, the cicatrix of an old ulcer was discovered in the vicinity of the pylorus, which was exactly the spot to which he had referred his pain during the continuance of his gastric affection.

Gentlemen, there is perhaps no science in which the motto "*medio tutissimus ibis*" is of more extensive application than in medicine. Some physicians on the continent, particularly the disciples of Broussais, having repeatedly witnessed the advantages of strict regimen and local depletion in chronic gastritis, have pushed this practice too far. They seemed to forget that the system requires support and nutrition, which can be effected only through the agency of the stomach; they saw the evils which result from the use of stimulating food in cases of chronic gastritis; and looking to these alone, they ran into the opposite extreme, the consequence of which was, that they kept their patients so long upon low diet, that they actually produced the very symptoms which they wished to remove. The patients became dyspeptic from real debility of the stomach and the whole frame. You remember a general law of pathology to which I have alluded on a former occasion, and which I shall again mention, as it illustrates this point, namely, that opposite states of the economy may be accompanied by the same symptoms. Thus we observe, that palpitation may depend on two different causes—on a sthenic or asthenic condition—on the presence of too much or too little blood in the heart. Now, it frequently happened that patients labouring under chronic gastritis, and who had been treated for a long time after the strict plan adopted by the Broussaists, finding themselves not at all improved, went to other physicians who had different views, and were rapidly cured, by being put upon a full nutritious diet. In this way numerous cases, which water diet and depletion had only aggravated, were relieved, and the consequence was, that a mass of facts was brought forward and published, not long since, by a French author, against the antiphlogistic treatment of dyspepsia and chronic gastritis. It must be stated, however, that the

cases which he published were chiefly those in which the depleting system had been carried to excess, and that they cannot, therefore, be received as proofs of the value of a stimulating diet in the treatment of chronic inflammation of the stomach. Bear this in mind; the sooner you can put your patient on a nutritious diet the better will it be for him. It would be absurd to keep a patient for many months, as the Broussaists have done, on slops and gum-water. It will be necessary for you to feel your way and improve the diet gradually. Commence by giving a small quantity of mild nutritious food; if your patient bears it well, you can go on; if the gastric symptoms return you can easily stop. If a small portion of the milder species of food rests quietly on the stomach, you may increase it the next day or the day after, and thus you proceed to more solid and nutritious aliment, until the tone of your patient's stomach regains the standard of health. Never lose sight of this fact, that you may have a case of dyspepsia depending on a chronic gastritis, in which, though you remove the *inflammation* by a strict antiphlogistic treatment, you may not by this remove the *dyspepsia;* and if you continue to leech, and blister, and starve your patient *after the inflammatory state be removed*, you will do great injury. Such a patient, falling into the hands of another practitioner who treated him on a different system, might be relieved, and his case quoted against you and your treatment, though this, at the commencement, was judicious and proper.

With respect to internal remedies, the school of Broussais think that there is nothing required but cold water and gum. This is going too far. In a former lecture I have drawn your attention to the fact, that in the treatment of acute inflammation there is a point where antiphlogistics should cease, and where tonics and stimulants are the most efficient means of cure. Of this fact the disciples of Broussais appear to be ignorant, and they consequently declared against every remedy for chronic gastritis except leeches and cold water. Now is this right? I think not. We find that, in all cases of gastric inflammation, a change in medication seems to be useful at some period of the disease, that is, a change from antiphlogistics to tonics and stimulants, and I believe that in cases of chronic gastritis these remedies may be used with very great advantage, having, of course, premised depletion and counter-irritants. I believe too, that most of the remedies, which we see every day unsuccessfully employed, would have acted beneficially, if the preparatory treatment which I have mentioned had been adopted. Among the best remedies of this kind is the oxide of bismuth; I have seen more benefit from the use of this than of any other medicine, after the treatment already alluded to. Generally speaking, the list of internal remedies for chronic gastritis is very small, but after the use of antiphlogistics you may prescribe the vegetable tonics and oxide of bismuth with advantage. The most decidedly valuable remedy, however, in the after stage of a chronic gastritis is the acetate of morphia, which I am convinced has a very powerful effect in allaying chronic irritation of the stomach. Dr. Bardsley of Manchester, in one of his published works, entitled "Hospital Facts and Observations," adduces many cases of gastric irritation which were completely relieved by the use of this remedy, and I am perfectly satisfied of the truth of his statements. It may be said that Dr. Bardsley's cases were only instances of dyspepsia. But as his cases were extremely numerous, some of them of long standing, and the symptoms very severe, the great probability is, that some of them at least must have been cases of chronic gastritis. I know very few books, the perusal of which I would more strongly recommend to you, than Dr. Bardsley's accurate and instructive work. The great besetting sin of medical writers is, that their statements of successful practice are grounded on a very limited number of cases, or that, in publishing the result of their practical investigations, they only give their successful cases, and leave out those in which the treatment recommended has been found inefficacious. Yet this is a circumstances which should never be neglected. If a man declares that he has discovered a cure for gastritis, or dyspepsia, and brings forward one hundred

cases in which the remedy has done good, the statement is still unsatisfactory and insufficient, because there may be one thousand cases in which it has totally failed. Unless he comes forward and gives both his successful and unsuccessful cases, of what value are his statements? Dr. Bardsley, with the candour and good sense which always characterize the philosophic inquirer, gives the result of *all* his cases, forms them into tables, and then leaves his readers to judge for themselves. From an inspection of these tables, you will be convinced of the efficacy of acetate of morphia in the treatment of chronic gastritis. I have been in the habit of using it with the most gratifying results after leeching, regulating the diet, and paying proper attention to the state of the bowels. There are some forms of the disease in which it is more useful than others. The particular form in which it proves most serviceable, is where there is a copious secretion of acid from the stomach, (that form in which all kinds of alkalies have been exhibited,) where severe pain and constant acidity are the prominent symptoms. Here I have seen the acetate of morphia act exceedingly well. You may begin with one-twelfth of a grain, made into a pill with crumb of bread, or conserve of roses, twice a-day; the next day you may order it to be taken three times, and you may go on in this way until you make the patient take from half a grain to a grain and a half in the twenty-four hours. I shall here mention the circumstances of a case, which I do not mean to bring forward as an instance of cure, but as an illustration of the extraordinary power which acetate of morphia possesses in relieving gastric irritation. A gentleman of strong mind and highly cultivated intellectual powers, which he kept in constant exercise, got a severe chronic gastritis: his appetite completely declined; he had frequent vomiting of sour matter; fœtid eructations; and such violent pain in the stomach, that he used, when the attack came on, to throw himself on the ground, and roll about in a state of indescribable agony. He applied to various practitioners, had several consultations on his case, and the opinion of the most eminent medical men was, that he had incurable cancerous disease of the stomach. These symptoms continued for several years, but for the last two or three years they were quite intolerable. He had repeated cold sweats, vomited every thing he took, even cold water, was reduced to a skeleton, and led a life of complete torture. Under such circumstances he tried, for the first time, by my advice, the acetate of morphia. He tried it first in doses of one-tenth of a grain three times a-day, and experienced the most unexpected relief. On the third day all his bad symptoms were gone. He had no pain, no vomiting, no sweats; his spirits were raised to the highest state of exhiliration, and he thought himself perfectly cured. He went out in the greatest joy, visited all his friends, and told them that he had at last got rid of his tormenting malady. In the evening he joined a supper party, indulged pretty freely, and next morning had a violent hæmatemesis, to which he had been for some time subject. All his old symptoms again made their appearance. He again had recourse to the acetate of morphia, and again immediately experienced relief, but the vomiting of blood again returned, so that he discontinued the remedy. This gentleman is now in the enjoyment of good health. He regulated his diet, left off all medicine by the mouth, used warm water injections, and thus recovered from his supposed cancer.

I do not bring this case forward as an instance of the curative effect of acetate of morphia, but as an instance of its powerful effect in allaying gastric irritation. I could adduce other cases in proof of its value in the treatment of the after stage of chronic gastritis, and particularly of that form in which pain and acidity are the prominent symptoms; but I perceive my time has nearly expired. At my next lecture, I shall give some other particulars connected with this subject, and then proceed to the consideration of diseases of the small intestine.

In speaking of the employment of counter-irritation in cases of chronic gastritis, I forgot to mention the use of friction with croton oil, which has been found beneficial in many cases of chronic inflammation. It has been exten-

sively used by many practitioners in the treatment of chronic affections of the joints, and in various forms of pulmonary disease; and I have employed it myself in some cases of chronic gastritis with benefit. I cannot say that the cases in which I have used it presented all the symptoms of chronic gastritis, but they were certainly cases of chronic gastrodynia, with severe local pain, nausea, and loss of appetite. It is an excellent counter-irritant, and gives very little pain. The mode in which I employ it is this,—take a few drops of croton oil, five or six, for instance, drop them on the epigastrium, and rub them in with a piece of lint or bladder, interposed between your finger and the skin, and the next day you have an eruption of small papulæ, which you can increase at will. There is one interesting circumstance connected with the use of croton oil frictions, which you should be made acquainted with. The liability to produce counter-irritation, seems to depend upon the absorption or non-absorption of the croton oil; if it be absorbed it will purge, but if it be not it will produce counter-irritation. In cases of this kind, therefore, where it produces the necessary degree of irritation in the skin, the chances are, that it will not act disagreeably by bringing on catharsis. I have only seen one case where there were both the eruption and catharsis. This was a gentleman who had lately suffered from dysentery in warm climates.

I may also mention, that in convalescence from an attack of chronic gastritis, you must pay great attention to diet for a long time, because there is no affection of any organ in the body, in which an error in diet so rapidly induces a return of the original symptoms, as in disease of the stomach, while each return of the disease renders the attack more dangerous and unmanageable, until at last disorganization takes place.—*Ibid.*, *Feb.* 1*st and* 8*th*, 1834.

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31. *On the Use of Blisters.* By William Stokes, M. D. [Extracted from Lectures on the Theory and Practice of Medicine, delivered at the Medical School, Park street, Dublin.]—It is a great error to think that blistering is a matter of course in inflammatory diseases, or that the proper period for their application should not be carefully marked. It is a common idea, that if a blister does no good it will do no harm; that it is probable some benefit may result from its employment, and that you may try it at all events. I need not tell you that all this is wrong, and that we must be guided by exact principles in this as well as in every other part of practical medicine. I am afraid there is a great deal of loose reasoning and empirical practice connected with this subject, even at the present day. Here is the general rule by which you should be invariably guided. No matter what kind of disease you have to deal with, if it be inflammatory, blistering in the early stage of it is decidedly improper. I might amplify this rule, and say, that if the disease be inflammatory and in its early stage, or, if, under such circumstances, the symptoms require the general or local abstraction of blood, blisters cannot be used with propriety. The truth is, that many persons take a very limited view of this subject; they look upon blisters as merely revulsive agents, which, by their action on the surface, have the property of diminishing visceral inflammation. This I am willing to allow is true to a certain extent, but there is abundant evidence to prove, *that blisters have sometimes a direct stimulant effect on the suffering organ.* That this occasionally occurs has been established by many facts in medicine; and I have not the slightest doubt, that the application of a blister over an organ in a state of high inflammatory excitement will certainly be productive of injurious consequences. But if you apply them at the period when stimulation is admissible and useful, (and there will always be such a period in every inflammation,) you then act on just principles, and will generally have the satisfaction of finding your practice successful. The greatest empiricism is sometimes practised in the application of blisters to the head in acute inflammation of the brain. You will see, in Mr. Porter's admirable work on the Pathology of the Larynx, how strongly he is opposed to the early use of blisters in acute laryngitis. Dr. Cheyne, also, may, among many others, be quoted in support of this doctrine.

If there is one system more than another likely to be injured by early blistering, it is the digestive. Broussais says, that blisters should not be applied in any of the stages of acute gastro-enteritis, and that in the early stage their application is the very height of malpractice. I do not go so far as to say that they should not be applied in any period of the disease, for when the skin is cool, the pulse lessened, and the local inflammation so far reduced as not to require the abstraction of any more blood, I think you may employ them with very considerable advantage. I shall again return to the subject of blisters; and will for the present merely remark, that blistering is almost always mismanaged, in consequence of persons who apply them being ignorant of their stimulating effects on organs. They generally allow them to remain on too long, and the consequence of this is often violent excitement of the organ over which they are applied, great constitutional irritation, strangury, and bad sores. The best mode of using them is to direct the person who prepares the blister to cover it with a piece of silver-paper before it is applied, and having put it on with the paper next the skin, to let it remain until a decided sense of smarting is produced, when it should be immediately removed. By adopting this plan, you will save yourself and your patient a great deal of inconvenience; you will have no strangury, stimulation of the whole economy, or excessive local irritation, and the inflamed surface will heal kindly. The mode, (too often practised,) of applying a blister sprinkled all over with an additional quantity of powdered cantharides, and leaving it on for twelve, twenty-four, or even thirty-six hours, particularly in the case of females, is nothing better than horse doctoring. During a seven years' experience in the hospital at Tours, Brettonneau, by attending to this principle, never had a case followed by these troublesome symptoms, and yet he never failed in producing the necessary degree of counter-irritation. The active principle of cantharides, being soluble in oil, exudes through the silver-paper in sufficient quantity to produce the necessary effect on the skin, without exposing the patient to the risk of having too much irritation excited by the direct application of the blistering plaster to the cutaneous surface.—*Ibid, January 25th*, 1834.

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32. *On Delirium Tremens.* [Extracted from Dr. Stokes's Lectures on the Practice of Medicine.]—You have seen cases of delirium tremens, but you are not, perhaps, aware that it arises under two opposite classes of causes. In some cases, a patient who is in the habit of taking wine or spirituous liquors every day in considerable quantities, meets with an accident or gets an attack of fever. He is confined to bed, put on an antiphlogistic diet, and in place of wine or whiskey-punch gets whey and barley-water. An attack of delirium tremens comes on, and symptoms of high cerebral excitement appear. Another person, not in the habit of frequent intoxication, takes to what is called a fit of drinking, and is attacked with delirium tremens. In the first case the delirium arises from a want of the customary stimulus, in the second from excess. In each the cause of the disease is different; and consequently, with this view of the subject, it would be a manifest departure from sound practice to treat both cases in the same way. Yet, I believe, this error is frequently committed, even by persons whose authority is high in the medical world, and is part of a system not yet exploded,—*the system of prescribing for names and not for things.* The patient is treated for a disease which has been called delirium tremens, the present symptoms are [illegible]y attended to, and the cause and origin of the affection are overlooked. What are the true principles of treatment?—In the first variety, where the delirium is produced by a want of the customary stimulus, there is no doubt that patients have been cured by the administration of the usual stimulants, by giving them wine, brandy, and opium. Indeed this seems to be the best mode of treating this form of the disease. But is it proper or admissible in the second variety, where the dilirium is caused by an occasional excess in the use of ardent spirits?—Certainly not. Yet what do we find to be the ordinary practice in hospitals when a patient is admitted under such circum-

stances?—A man, who has been attacked by delirium tremens after a violent debauch, is ordered a quantity of porter, wine, brandy, and opium; and the worse he gets, the more is the quantity of stimulants increased. Now this practice seems to me as ridiculous as the old principle of treating a case of hydrophobia with the hair of the dog that bit. Let us consider what the state of the case is. A large quantity of stimulant liquors have been taken into the stomach, the mucous surface of that organ is in a state of intense irritation, the brain and nervous system are in a highly excited condition from the absorption of alcohol, or in consequence of the excessive sympathetic stimulation to which they have been subjected. Are we to continue this stimulation?—I think not. What would be the obvious and natural result?—Increased gastric irritation, encephalitis, or inflammation of the membranes of the brain. The supervention of inflammatory disease of the brain in delirium tremens is not understood by many practitioners, and they go on administering stimulant after stimulant, totally unconcious that they are bringing on decided cerebral disease. I have witnessed the dissections of a great many persons who died of delirium tremens, and one of the most common results of the dissection was, the discovery of unequivocal marks of inflammation in the brain and stomach. Broussais considers all such cases as merely examples of gastritis, and ridicules British practitioners for inventing "a new disease;" but in this he is certainly wrong, for there have been several cases in which no distinct marks of gastric inflammation could be discovered. In all cases, however, where the delirium supervenes on an excessive debauch, there is more or less of gastritis; and though it may occasionally happen, that a patient under such circumstances may recover under the stimulant treatment, yet I am convinced that the physician will very frequently do harm by adopting it.

This complication of delirium tremens with gastritis is also exceedingly curious in another point of view, as it illustrates how completely the local symptoms are placed in abeyance, and, as it were, lost during the prevalence of strong sympathetic irritation. The patient's belly will not be tender; the tongue may not be red; the symptoms present may be indicative of a mere cerebral affection, and yet intense gastric inflammation may be going on all the time, and all the appearances of cerebral disease be quickly removed by treatment calculated to subdue a gastritis. Is this all theory? No; for we have practised on this principle with the most extraordinary success in the Meath Hospital. We have seen cases of violent outrageous delirium subside under the application of leeches to the epigastrium, and iced water without a single drop of laudanum. I beg of you, if you meet with any cases of delirium tremens under such circumstances, to make trial of this mode of treatment, and record its effects, for it is important that they should be more extensively known. I have seen the whole train of morbid phenomena, the delirium, the sleeplessness, the excessive nervous agitation, all vanish under the application of leeches to the epigastrium. In some cases where after the sleeplessness and delirium were removed by this practice, and the tremors alone remained, we have again applied leeches to the epigastrium, and succeeded in removing the tremors also. On the other hand, where a stimulant plan of treatment was employed, and the patients died, we have most commonly found inflammation in two places, in the stomach, or in the brain or its membranes. The rule, then, is this,—in a case of delirium tremens from the want of a customary stimulus, use the stimulant and opiate treatment; but when it comes on after an occasional violent debauch, such remedies must be extremely improper. Adopt here every thing calculated to remove gastric irritation. We have facts to show that most decided advantage may arise from the application of leeches, even where the symptoms of gastritis are absent.—*Ibid.*

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33. *On Mammary Abscess.*—Dr. Beatty, of Dublin, in a paper in the *Dublin Medical Journal*, for January last, extols the controlling power of tartar emetic in this affection. On the accession of inflammatory symptoms in the breast, after

purging the patient, he administers the tartar emetic in doses of one-sixteenth of a grain, repeated every hour, so as to induce slight nausea. If vomiting is induced, the medicine is to be omitted for an hour or two, and its use then recommenced at longer intervals. In ordinary cases, after twenty-four hours, the pain and fever, Dr. B. says, are usually mitigated, and the breasts are smaller and softer. If these effects are not produced in that time, Dr. B. doubles the dose, provided the stomach will bear it, and it rarely happens that it will not, for Dr. B. says, that he has observed that in those cases which do not yield readily, the stomach is very patient of the medicine.

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34. *On the Treatment of Porrigo Decalvans by Solution of Tartar.* By Dr. H. Beauchamp.—Few affections more frequently baffle the skill of the medical practitioner, or give employment to the nostrum monger, than porrigo decalvans. Our author has some doubt as to the propriety of placing the affection in question in the genus porrigo, but does not stop to offer a new arrangement. He was led to try the effect of tartrite of antimony in this disease, from a conversation with his friend Dr. Carter, an army-surgeon of considerable experience, who had often succeeded with this remedy in restoring the growth of hair that had fallen off in consequence of acute diseases, the use of mercury, &c. The strength of the solution was five grains to an ounce of distilled water. Shortly after this conversation a young lady applied to Dr. B. complaining that her hair fell off from a particular spot of her head. On examination, this part was found to be slightly red, unlike what generally happens, and therefore he thought it proper to apply leeches in the first instance. After the second application the hair began to grow, and there was no necessity for the antimony. After several months the lady returned, with another bald part; but this time the skin was pale. Nevertheless he applied leeches, without any good effect. Afterwards he had recourse to the antimonial solution, which was applied three times a day. The hair grew again, and of the same colour as the rest of the hair.

The next case was that of a young lady from whose head the hair first fell off in spots, but in the course of five or six years, half the head had become bald, in spots, from the size of a sixpence to that of a half-crown. The antimonial solution was then employed, having the remaining hair shaved off. By mistake the solution was made too strong, and brought out a crop of pustules. When these had healed a soft down of hair was perceptible on the affected parts, but of a lighter colour than the remaining hair. The head was again shaved, and the solution of proper strength was ordered. But the anxious mother again applied a strong solution, which brought out a crop of pustules not only on the head, but over nearly the whole body, accompanied by febrile action requiring antiphlogistics. The fever subsided, and the pustules disappeared, except from the head, where the pustules coalesced and formed an immense scab, not unlike those of tinea capitis. The lady bathed in the sea during the summer months, had the head repeatedly shaved, and subsequently recovered completely, having the head covered with a uniform growth of hair.

Even these few instances deserve the notice of the profession, and further trial of the remedy.—*Med. Chirurg. Rev. from Dublin Journ. No. XII.*

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35. *Neuralgia.*—M. Roux, in a memoir in the *Bulletin Générale de Thérapeutique*, for 1832, strongly recommends the external use of the following lotion in neuralgia:—℞. Distilled cherry-laurel water, ℥iv.; Sulphuric ether, ℥j.; Extr. belladonna, ʒij. M.

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36. *Hydrophobia.*—M. Buisson has written to the Paris Academy of Sciences, to claim a paper, which he forwarded so far back as 1823. The paper contained a case of hydrophobia, which was his own; the following is the report of it.

He had visited a woman, who had been suffering under symptoms of hydrophobia for three days. She had constriction of the throat, inability to swallow,

abundant secretion of the saliva, and foaming at the mouth. She had been bit by a mad dog forty days previously; she was bled, and died shortly afterwards.

M. Buisson, whose hands were covered with blood, incautiously cleansed them with a towel which had been used to wipe the mouth of the patient. He then had an ulceration upon one of his fingers, yet thought it sufficient to wash off the saliva that adhered with a little water. The ninth day after he was suddenly seized with a pain in his throat and eyes. The saliva was continually discharging into his mouth; the impression of a current of air, the sight of brilliant bodies, gave him a painful sensation; his body appeared to him so light, that he felt as though he could leap to a prodigious height, and experienced a wish to bite, not men, but animals and inanimate bodies. Finally, he drank with difficulty, and the sight of water was still more distressing to him than the pain in his throat. These symptoms recurred every five minutes, and it appeared to him as though the pain commenced in the affected finger, and extended thence up to the shoulder.

From the whole of the symptoms, he judged himself affected with hydrophobia, and resolved to terminate his life by stifling himself in a vapour bath. Having entered one for this purpose, he caused the heat to be raised to 42°, (107° 36′ Fah.) when he was equally surprised and delighted to find himself free from all complaint. He left the bathing-room well, dined heartily, and drank more than usual. Since that time he has treated in the same manner more than eighty persons bitten, in four of whom the symptoms had declared themselves bad, and in no case has he failed, except in that of one child, seven years old, who died in the bath. The mode of treatment he recommends is, that the person bit should take a certain number of vapour baths, (commonly called Rousseau,) and should induce every night a violent perspiration, by wrapping himself in flannels, and covering himself with a feather bed, the transpiration to be favoured by drinking plentifully of a warm decoction of sarsaparilla. M. Bouisson declares himself so convinced of the efficacy of this treatment, that he will suffer himself to be inoculated with the disease, and as a proof of the utility of copious and continued perspiration he relates the following anecdote.

A relative of the musician Grétry was bitten by a mad dog, with many other persons, who all died of hydrophobia. For his part, feeling the first symptoms of the disease, he took to dancing night and day, saying *that he wished to die gaily*. He recovered.

M. Buisson also draws attention to the fact, that the animals in whom this madness is most frequently found to develope itself spontaneously, are dogs, wolves, and foxes, which never perspire.

37. *Tracheotomy in the Last Stage of Croup.*—M. Trousseau, in an interesting paper on this subject, in the second number of the *Journal des Connaissances Médico-Chirurgicales*, states that there has come to his knowledge twenty-one cases of croup in which tracheotomy was performed in the last stage of the disease, and seven of them were saved, viz. five by M. Bretonneau, one by M. Bulliard, and one by himself. As in those twenty-one cases the operation was not performed until death seemed inevitable, and there remained no other means of safety, he thinks that it is the duty of a conscientious practitioner not to neglect a dernier resource, which finally leaves still some chance. The operation is easily performed, and rarely dangerous, he adds, since of the twenty-one cases operated on, not one experienced the least accident.

OPHTHALMOLOGY.

38. *Observations and Reflexions upon Amaurosis, communicated by* M. A. Berton, *First Assistant Surgeon to the Municipal Guard of Paris.*—Richter assigns three orders of causes as operating in the production of amaurosis. The first

comprehends those which determine a plethora or turgescence of the sanguine vessels of the brain, retina, and optic nerve, which state he supposes produces a certain degree of compression of these organs. The second includes those causes which operate in debilitating the economy of the organ of vision alone. There is nothing, according to this author, that tends more certainly to enfeeble the forces of these organs than the fatigue incident to their exposure to brilliant objects, (the reflexion from a bright light for instance;) the absolute fixedness of vision necessary in the examination of minute objects, operates in the same way. He cites a case of a person, who, in being obliged to pass over a portion of country covered with snow, found himself suddenly attacked with amaurosis, and another in which the disease was occasioned by the patient having been exposed to the reflexion from a brilliant flash of lightning. Professor Beer is also of opinion that this class of causes operate in producing the disease. In the third order of causes are ranged all those irritations which affect in an inexplicable manner the optic nerve, rendering it insensible to the impression of light. Several of these irritations are supposed to have their seat in the abdominal viscera, whence they radiate, affecting the eyes sympathetically. In the true and simple amaurosis of Beer, we have only the vital properties of the optic nerve and retina affected, and the affection depends either upon an excess of vitality, or better, of sensibility of these nervous portions; or upon a debility of this vitality or sensibility. The first variety of this species of amaurosis always depends upon a determination of blood to the head and eyes, which exercises a manifest influence over the primary formation of the disease. All those circumstances, which tend to produce either general debility or debility of the eyes alone, are the causes more or less determinant of the second species. In the interesting clinical lectures of Dr. Lichel, published in the Lancet, (No. 64,) we are told, "that all cases of amaurosis, which are not symptomatic of the disease of some other organ than that of vision, (that is to say, that are not sympathetic,) may most generally be reduced to two classes, the one in which the disease depends upon the existence of an irritative or sanguineous congestion, or even an inflammation, either of the choroid membrane, the retina, or optic nerve; the other, where it is brought about by a paralysis more or less complete of the last mentioned nervous divisions." These explanations, and those given by most writers upon diseases of the eye, relative to the etiology of the disease, differ but little from each other. Considering them then, as being the most generally received as correct, we shall go on to the consideration of the following cases, and try to discover to which order of causes they are most strictly to be referred.

Observation 1.—The subject of this case was a young woman, aged twenty-four years, of a good constitution, possessing no traits of the lymphatic temperament, perfectly regular, enjoying at the time excellent health, and who had, moreover, never suffered from any indisposition. Jumping up suddenly one night, she placed herself at a window looking into a street, in which there happened to be a very bright light. All at once she experienced a very extraordinary sensation in the right eye, and was struck with surprise and terror upon finding that in a few moments the lid of that side involuntarily closed itself, and that vision in that eye was very imperfectly performed. Leeches, blisters, irritating frictions upon the temples, were all prescribed, but without producing the slightest amelioration in the symptoms. I was not called to the patient until about the fifteenth day after the occurrence of the attack. At that period the right lid was incapable of any motion whatsoever, and fell down over the eye as soon as the force applied to raise it was removed. It nevertheless retained its sensibility, and the slightest touch upon its surface was perceived. The eye looked outwardly, and its pupil was dilated and but slightly contractile. In the other eye, which was, moreover, in a perfectly physiological condition, vision was performed in a very imperfect manner, objects appearing as if seen through gauze. When examined with both eyes every thing appeared double. For some days past she had suffered from a slight cephalalgia located near the right co-

ronal region. The double vision resulted in this case from a deviation of the visual axis, and this deviation was dependent upon the disease being confined to but one eye. Richter considers strabismus as being the most certain diagnostic in amaurosis. Beer, who also considers this phenomenon as being usually present in similar circumstances, explains it by observing, that it results from the eye of the patient never resting or fixing itself upon an object. It seems to me, however, that we may, with at least as much propriety, refer the cause to the disease itself, or to an extension of it: in the first place, this phenomenon is never observed except in those cases in which amaurosis is incomplete, where certain portions only of the retina, (particularly the median,) have been attacked with paralysis. The other portions of this nervous expansion, still remaining sensible to the influence of the light, will instinctively turn towards the field of vision, in order to receive the impression of the luminous rays. According to another hypothesis, the strabismus results from a paralysis of some motor muscle of the eye, whereby a want of antagonism takes place. We can as easily conceive how one of the straight muscles may become paralyzed, as that the levator of the lid should lose its power of contracting. However this may be, I am of opinion that the preceding case should be referred to the second division of Richter. I recollect, in fact, similar cases that he has cited; among others, that of a person labouring under ecstasy, who, upon being exposed to the reflexions of light from the disc of the moon was attacked with amaurosis. Considering the youth and strength of the patient, as well as the insufficiency of the two or three previous leechings, I insisted upon a repetition of the sanguine emissions, and also the exhibition of revulsive remedies addressed to the intestinal canal. Having obtained no amelioration in the symptoms whatever towards the end of the eighth day, I thought it adviseable to change the plan of treatment, and accordingly prescribed such remedies as promised to stimulate or re-excite the sensibility of the nervous portions of the eye, and irritating frictions to the temples, forehead, and even to the lid itself, were employed; she was also ordered to take the pills of Meglin, to have a large blister applied to the nucha, and to take a vomit, (a remedy by the by I should have feared to prescribe had I supposed that the affection depended upon plethora of the vessels, as it would in such a case have proved hurtful, by determining a greater quantity of blood to the part diseased.) In less than a week a remarkable improvement in all the symptoms manifested itself; the lid opened of its own accord, and allowed the lower portion of the pupil to be seen, and the affected eye distinguished a little more clearly objects that were placed before it. She remained in this improved condition for some time, without any change for the better, and the progress towards a cure seemed to have stopped at this point. I determined after some days to employ the strychnine; I administered it at first in the dose of a fourth of a grain once a day, and augmented it gradually until she took half a grain night and morning. In ten or twelve days she was completely cured, the visual axes, (which had been daily approaching each other nearer and nearer,) became again perfectly parallel, and there remained neither in the appearance of the eye itself, nor in the performance of its functions, a single trace by which one would be led to suspect the previous existence of the disease.

Observation 2.—The second observation resembles very much the preceding, and was taken about the same time by Dr. Bodson, a relative of mine. The patient, a woman aged about fifty years, who had had several children, and with whom the critical period had passed only a few years, was attacked with amaurosis in both eyes, which came on gradually. When Dr. Bodson was consulted the disease had existed thirty-five days. The lids were closed and paralyzed, the right pupil slightly dilated, and vision imperfect, (objects appearing as if seen through a cloud.) The sight appeared much more confused on the side of the dilated pupil. She had been bled and leeched three times, twice behind the ears, and once upon the internal superior portion of the thighs. She had also used the foot-bath containing mustard, and had taken purgative medicines.

No benefit whatsoever had resulted from this treatment. M. Bodson ordered the superior coronal region to be shaved and blistered, and the other remedies to be continued. From the fourth day after the application of the blister, the lids began to open of themselves, though to no great distance, but several days having elapsed without further improvement, the purgative pills were replaced by some composed of the alcoholic extract of the nux vomica. From this period a daily improvement in all the symptoms took place, and towards the end of the third week a complete cure was effected. The lids having in fact recovered all their former facility of movement, and the sight becoming so perfect that the patient was enabled to resume her occupation with the needle. It would be useless for us to endeavour to demonstrate by means of new details, that which seems evidently to exist from facts already given, viz. that the two preceding cases of amaurosis are not similar in their character to those which depend upon a visceral affection, (sympathetic amaurosis;) nor to those which result from a congestion, irritation, or even an inflammation of the nervous organs essential to the eye, but that they depended upon a paralysis of the nerves, or nervous membranes of the organs of vision; a paralysis which, according to oculists, attacks in a manner more or less complete the optic nerve, the retina, or even the choroid coat itself. Let us observe that the trifacial nerve has not been mentioned, notwithstanding the experiments of Professor Magendie, (the results of which are published in his Précis de Physiologie,) show, 1st, that the winking of the lid depends in part upon the facial nerve, and partly upon a branch of the fifth pair, and that it ceases, or but very rarely takes place, after a division of the latter, and that it ceases entirely always when the facial nerve is divided; 2d, that the section of the optic nerve destroys vision entirely, and that a division of the fifth pair does not entirely destroy the sensibility of the retina, but that a small portion of it remains. From these physiological facts may we not draw the inference, that branches of the fifth pair are the nerves affected in incomplete amaurosis, if not always, at least in those cases complicated with paralysis of the eyelids, as was the case in the two preceding observations?

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39. *Nutrition and Diseases of the Humours of the Eye.*—M. Bourjot, in a memoir communicated to the Royal Academy of Medicine, has endeavoured to show that the formation and renewal of the humours of the eye are due to the action of endosmose and exosmose. The basis of his theory is, that the humours of the eye, having different densities, and being separated by delicate and porous animal tissues, a double current of endosmose and exosmose takes place. He believes that the aqueous humour passes by endosmose through the capsule of the crystalline; that the humour of Morgagni passes through the posterior parietes of the crystalline capsule in the meshes of the vitreous humour; and that this last finally penetrates the parietes of the veins which ramify over the surface of the hyaloid membrane. Finally, he applies this theory to the explanation of the diseases of the humours of the eye, to different cataracts, for example, that the density of these humours vary, consequently their proportions, their circulation changes, and different cataracts form.—*Archives Générales, Oct.* 1833.

SURGERY.

40. *Hydrocele cured by Tincture of Iodine.*—M. P. Record, Surgeon to the *Hôpital des Vénériens,* has employed the tincture of iodine with success in five cases of hydrocele independent of any syphilitic cause. The tincture of iodine is diluted with distilled water, and applied to the tumours by aid of compresses imbibed with it, and in which the scrotum is enveloped. M. Record employs the tincture in four different degrees of concentration:—1st. Tinct. iod. ℥j.; Aq. distill. ℥iij.; 2d. Tinct. iod. ℥ij.; Aq. distill. ℥iij.; 3d. Tinct. iod. ℥iij.; Aq.

distill. ℥iij.; 4th. Tinct. iod. ℥vj.; Aq. distill. ℥iij. In subjects whose skin is very delicate and epidermis thin, the last formula is employed. When there is less sensibility and some hardness of the tissues, the other formulæ are employed pro re nata. For the medicine to produce its beneficial effects, the patients must experience a rather vivid but supportable sensation of heat; and without there being burning or vesication, the skin of the scrotum must become brown, or pass into brownish-red, the epidermis becoming like parchment, and forming scales that are detached leaving beneath them a sort of thick transpiration still without vesication. So long as these results are not obtained the dose of the tincture of iodine must be increased, the quantity of distilled water remaining the same; but when these effects have resulted, the tincture of the same degree of concentration must be continued by steeping compresses in it and renewing them twice a day. If pain supervene, the application is suspended for a few days, and its use resumed until the disappearance of the tumour.—*Journal des Connaissances Med. Chirurg. Jan.* 1833.

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41. *Resection of Bones in Ununited Fractures.*—Surgeons have long entertained an opinion with regard to the resection of bones in cases of ununited fractures, which M. Dupuytren considers as very injurious. They imagined it was absolutely necessary to cut out both fragments of the bone before a solid callus could be laid down; hence they avoided this operation in a great number of cases when this resection was extremely difficult if not impossible: thus, for example, they rarely had recourse to it in fractures of the femur, where the fragments frequently ride upon one another; the upper portion is the only one which can generally be got at with facility, while the inferior fragment, carried backwards and inwards, is too deep-seated to be exposed by an incision in this direction, while the presence of important vessels prevents any operation on the inner side of the limb. M. Dupuytren is inclined to hold this opinion as altogether wrong, and maintains that the resection of one fragment is sufficient to obtain the consolidation of both; at least two cases in which he employed this practice turned out successfully.—*Leçons Orales.*

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42. *On the Use of the Trepan in Tooth-ache.*—The means generally employed consist in the destruction of the nervous pulp of the tooth by laceration, cauterization, or the application of caustic to the bottom of the carious tooth. Experience proves that it is only necessary to destroy the dental nerve to subdue at once all sensibility in the part. The means employed by M. Fattori, and which experience has proved to him is the best to be relied on, consist in the application of a small trepan on the diseased tooth, after having conveniently fixed the head of the patient. A few turns of the instrument are sufficient to perforate the osseous tissue of the tooth, and the extremity of the trepan immediately divides the nerve which fills up the dental canal. The section made in this way immediately relieves the pain.

The operation, according to the old method of destroying the nerve with a sharp-pointed instrument, seldom succeeded, as the caries rarely allowed of the easy introduction of the instrument into its cavity, and that it was also impossible to divide the nerve in many cases completely, besides causing the patient very severe pain at the time. The operation by the trepan, on the other hand, may be always relied upon, and removes every difficulty in the section of the nerve, as it is applied immediately over the part which the nerve traverses, and is certain of dividing it. The application of heat to the part is not a sure remedy, as the cauterization must be very slight—it gives out heat rapidly, and when applied to the part has only sufficient heat to burn deeply. Some have advised the direction of a flame of hydrogen gas on the part, but it is not necessary to dwell long on the uncertainty of such an application. In using the trephine, there is no risk of wounding any parts of the mouth near the affected tooth; when its application to those which are situated far back, near the ascending ramus of the lower jaw, is facilitated by the use of a *speculum oris.* In using caustic to the teeth, its application cannot be confined to the seat of the injury,

and it spreads sometimes to the neighbouring healthy parts, causing and increasing irritation of the dental nerve, and sometimes an inflammation of the tissue of the gums. Nothing of this kind can happen in using the trepan.

This remedy may be used successfully in all affections of the teeth, from whatever cause they may arise; and whilst many other remedial means lead on to the loss of the tooth, the trephine preserves it, in immediately relieving the pain, and preventing its return.

M. Fattori has found the trephine particularly useful in that affection of the teeth which he denominates *internal caries*, where the part is extremely painful, without showing the slightest appearance of alteration in its tissue. It is in such cases that the patient, having borne the pain for a considerable time, consents to the extraction of the tooth, which in being done is frequently broken off, and the fangs, which are often very painful, remain in the alveolar process. When relief does not follow the application of the trephine, the pain which remains is frequently the result of antecedent inflammation in the neighbouring parts, requiring a particular treatment for its relief. It is adviseable after the operation to fill the aperture made by the trephine with lead, to prevent any portions of aliment or other foreign substance from lodging in it, and becoming a fresh source of pain, by irritating the newly-incised nervous surface. This, however, should not be done until some days after the operation, when the parts shall have lost all their sensibility, and the irritation of the neighbouring parts is subdued. The application of the trephine is useful when old stumps of teeth, which cannot be removed, become painful; and finally, it is exempt from all those accidents which attend the extraction of teeth.—*Archiv. Gén.*

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43. *Treatment of Fractured Limbs, by Inclosing them in Plaster Moulds, &c.*—The eminent German surgeon Dieffenbach is in the habit of treating many cases of fracture, especially of the bones of the leg, by enveloping the limb, or only ⅔ths of its circumference with plaster of Paris, after it has been ascertained that the fractured extremities lie in normal apposition with each other. It is of advantage to leave the anterior part of the limb exposed, as we have thereby an opportunity of watching the progress of the cure, and of applying any local remedies which may be necessary, especially when the case is one of compound fracture.

The principle of Dieffenbach's plan, that of an unmoveable apparatus round the broken limb, has been adopted by many surgeons both of ancient and of modern times. It is to that glory of French military surgery, M. Larrey, that we are chiefly indebted for its establishment in present practice. In the Russian campaign, the method was most extensively adopted, and many a limb which had been fractured by gun-shot injuries, and had been thus treated, was found on the return of the poor fellows to France, to have knit together most admirably, although the dressings had never once been removed from the period of the accident.

Larrey's apparatus has also the great advantage of being composed of materials the most simple, cheap, and almost always at command; for all that is required is a quantity of linen, straw, eggs, camphorated spirits, and of cold lead lotion. The mode of its adjustment is little more complicated than the application of a common bandage; and when once secured, the member is comparatively safe, and the patient, instead of being condemned to repose for a lengthened period, may be permitted to rise on the third or fourth day, and move about on crutches. Whatever be the limb which has been fractured, there is little risk of the apparatus being disturbed, even by a long journey; and if the jolting of the carriage be painful or improper, there is nothing to prevent the simultaneous employment of suspension, as proposed by M. Sauter. But often this is not necessary; for in from twenty-four to thirty-six hours, after the apparatus has been applied, it forms a compact, coherent, and accurately fitting mould or case round the whole of the limb, so that no one part of it can be moved without the rest of the limb following the motion; thus all danger of

lateral displacement is securely guarded against. It may be supposed that it is less efficacious in counteracting the shortening of the broken limb than some methods of permanent extension; this may possibly be true, but when it is stated that, out of eight cases of fractures of the femur, six were cured, without any shortening of the extremity, the argument cannot form any very potent objection to the practice; and indeed the very fact of all the muscles of the limb being equably and strongly compressed, (for the apparatus should be made to incase the whole of its length,) subdues in a great measure their tendency to contraction, and therefore obviates the tendency of the bones to ride over each other.

But if the immoveable apparatus which we have so strongly praised, and which our readers will find described at length in the 3d vol. of Baron Larrey's Clinique Chirurgicale, and also in an admirable thesis published lately by his son, possessed no other advantages besides the one of permitting the patient to move about safely during the treatment of his fracture, we should deem this sufficient to recommend it to the notice of surgeons; perhaps a case in point will be received as the most satisfactory evidence of the benefits accruing from its adoption.

A man of healthy constitution was admitted into a hospital for a complete fracture of the bones of the leg, about two inches above the malleoli. During six weeks he was treated by the common method, but at the end of that time it was found that union had not taken place. The foot being considerably everted, M. Berard first brought it into its right position, and then retained it there by means of Dupuytren's splints for another month and a half; and although there had been no displacement all this time, there was still a complete failure of any bony union. The immoveable apparatus was now applied; and when this had become sufficiently firm and compact, the man was allowed to get out of bed and walk about the ward on his crutches, without ever putting the broken limb to the ground. After the expiration of six weeks a perfect cure was obtained.—*Med. Chir. Rev. from Archives Générales.*

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44. *On Bony Union of Fractures of the Neck of the Thigh bone.* By Sir Astley Cooper.—I find in a report of Le Baron Dupuytren's lecture, that he attributes to me the opinion, that fractures of the neck of the thigh bone, within the capsular ligament, not only "never unite, but that it is impossible they should unite by bone."

It is quite true that, as a *general principle*, I believe that those fractures unite by ligament, and not by bone, as do those of the patella and olecranon. But I deny that I have ever stated the impossibility of their ossific union; on the contrary, I have given the reason why they occasionally may unite by bone.

The following are my words—"*To deny the possibility of their union, and to maintain that no exception to this general rule may take place, would be presumptuous.*"

I then proceed to state, that the cause of the deficient union is to be found in the reflected ligament of the cervix femoris being torn through, and that thus a defective nutrition of the head of the bone is produced. But I held, that if the reflected ligament remained whole, or was but slightly torn when the bone was broken, it would unite by means of its cancellated structure; but that in such a case the limb would not be shortened in the usual manner, nor would the case have the common characteristics of this accident.

In proof of the truth of these observations, I shall give the following quotation from Mr. Swan's work on the Diseases of the Nerves, page 304.

"Case.—Mrs. Powell, aged above eighty years, fell down in the afternoon of the 14th of November, 1824. I saw her soon after, and found her complaining very much of pain in the left hip. The limb could be moved in every direction, but this motion produced excessive pain. She lay on her back, with the limb extended; and nothing *was ever done*, except the application of fomentations for the first few days. I believed there was a fracture of the neck of

the thigh-bone, although the limb remained quite as long as the other, and I neither perceive a crepitus, nor any altered appearance in its position, except a slight inclination of the toes outwards. She had more constitutional irritation than I ever observed from a similar accident. She suffered much pain in her hip and was in consequence obliged to take an opiate; but she got very little rest. She generally had much thirst. There was the utmost difficulty in keeping her bowels open; and she had great pain and difficulty in making water. She had no appetite for common food, and for three weeks appeared so weak, that she was under the necessity of taking wine and brandy. For some time all her urine and stools were passed in bed, but not involuntarily, and only because she could not be persuaded to use proper means; in consequence, her back became very sore. Latterly she complained of pain in the abdomen, which was very tender on pressure, and made even the weight of the bed-clothes inconvenient. Her tongue became very dry and brown; and in the last twenty-four hours she was insensible. She died on the morning of the 19th of December, about five.

"*Examination.*—This took place at seven in the evening.

"There was some ecchymosis amongst the muscles about the injured part, and in the cellular membrane, about the sciatic and anterior crural nerves. The greatest part of the fracture of the neck of the thigh-bone, which was entirely within the capsular ligament, was firmly united.

"A section was made through the fractured part, and a faint white line was perceived in one portion of the union, but the rest appeared to be entirely bone." Mr. Swan goes on to say, "This beautifully shows the principle which Sir Astley Cooper has advocated—viz. that when the reflected ligament remains whole, and the bones are not drawn asunder, the nourishment to the head of the bone continues, and union will be produced even in the short space of five weeks, by only placing the knee over a pillow, and in other respects leaving the case to nature."

Of the contrary state of the fracture—viz. that in which the reflected ligament is torn—I may give the case sent to me by Mr. Robertson, of Sheerness, in which the patient's limb was extended for six months without any ossific union.

On the 25th of June, 1822, William Durain, aged 62, a tall, athletic convict, of a sanguine temperament, fell, with a very inconsiderable violence, across a piece of timber in the Dock-yard, his left hip coming in contact with the wood. On rising, he felt an acute pain in the region of the acetabulum, but no other inconvenience, for he walked on board to exhibit himself to the surgery-man. From finding him ranked up with the sick of the hulk, on my morning visit of the 26th, from his walking on board, and from his own account of the accident, I did not suspect any serious injury to the joint, and treated the case as one of concussion. On the 29th, however, he complained of a very sudden and very agonizing accession of pain, which induced me to subject him to a more critical examination. No evident alteration in the size of either hip could be discerned, but a shortening of the limb was conspicuous, which was rendered more evident by making him stand upon the sound limb: extension removed this difference; but, on being freed from restraint, it again assumed its morbid shape; the knee and foot were everted, and rotation greatly increased his pain.

I removed him to the hospital, as a case of fracture within the capsule; but a continued attention for a period of six months to position, (chiefly with a view of restraining the motion of the pelvis, and of securing the limb,) made no other alteration in the symptoms than a gradual diminution of pain: a pair of crutches were given him, he was placed on the invalid list, and remained till the 26th of September, when he died from general dropsy. On dissection, the injury proved a transverse fracture of the head of the femur, within the capsular ligament; no species of union had taken place. The upper portion of the fractured bone was retained in situ, by the sound ligament, tolerably smooth upon its surface, but without any ossific deposit.

The lower portion was very irregular, with several detached pieces of bone

adhering to the insertion of the capsular ligament. Between the acetabulum and the portion of bone retained in situ by the ligament, were several small oval-shaped, loose cartilaginous substances, apparently fragments of bone; the capsular ligament partially lacerated, in a line above the trochanter major, and greatly thickened in its insertions.

I should not have given you this trouble, nor should I have taken it myself, but for the respect I bear my friend the Baron Dupuytren; for, although I have already submitted myself to be misrepresented by many individuals, yet I should be sorry to be misunderstood by so excellent a surgeon, and so valuable a friend, as le Baron Dupuytren.—*Medical Gazette, April 25th*, 1834.

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45. *Amputation with a Single Flap.*—Dr. Legros recommends for amputations of the thigh and arm the following method, which he conceives to unite the advantages of the flap and circular operations without having the inconveniences of either. The patient and assistants being conveniently arranged, the surgeon grasps with one hand the muscles on the anterior face of the thigh, draws them from the bone; with the other hand he thrusts a knife held flat entirely through so as to separate these muscles from the bone, and forms a semilunar flap of six or seven inches. The operator carries back his knife to the bottom of the flap, which is raised by an assistant, divides the flesh which remains posteriorly, as in the circular method, and saws the bone, rounding if he thinks necessary its upper and lower edge.

Instead of commencing the flap by a puncture, and cutting from within outwards, the operation can be performed by an incision from without inwards, that is, from the skin to the bone.

The single flap may be cut square: if these measures are well taken nothing is easier than to make the lips of the wound meet perfectly.

This plan, as may readily be conceived, may be applied to the arm, however we prefer for this limb the circular method. Without regarding the facility and quickness with which this new plan may be practised, it appears to us to present the following advantages.

The flap unites by its own weight and facilitates by its position union by first intention, which by this manner can be very soon obtained.

The bone placed in the middle under a very considerable portion of flesh, does not tend, as in other methods, to project at the angles of the wound.

The angle being at the lowest point, the fluids flow out of their own accord, and by the most direct passage.

In case of hæmorrhage it is sufficient to raise the flap to discover the vessel from which the blood proceeds, and to twist or to tie it. The principal artery is found at the internal angle, and on a level with the wound.

By this method we avoid the conical form of the stump, the projection and exfoliation of the bone, the dragging caused by the dressings, and the search for the vessels which bleed primarily or secondarily.

The contraction of the stump, separation and gangrene of the skin, are not to be feared, and of phlebitis there is little chance whether originating from inflammation of the veins or the absorption of pus—the surface of the wound being protected from external causes.

The cicatrix in this method is linear, is not in the centre of the limb, it is beyond the reach of external injuries. This position, together with the muscular mass which forms and terminates the stump, facilitates the application of an artificial limb.—*Journal des Connaissances Med. Chirurg. February*, 1834.

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46. *Case of Osteo-sarcoma of the Left Upper Maxillary Bone, in which the whole of the Diseased Bone was Removed.* By M. Blandin. [Reported by M. Laplace.]—The subject of this operation was a female, fifty-five years of age, habitually healthy, and the mother of several children, who enjoy good health; she affirms that she never contracted syphilis, and traces the commencement of her disease to six months back. At this period one of the left upper molar

teeth became spontaneously the seat of excessive pain, loosened, and in a short time fell out, leaving an opening which never closed since. At the same time two small fleshy tumours, as large as a pea, red, and smooth, developed themselves on either side of the fistula, which gave issue to a small quantity of puriform mucus, fetid, and sometimes mixed with blood. A surgeon being now called upon, made some trifling incision, which gave issue to some blood, and from that day the tumours gradually enlarged.

On being received into the hospital, 11th of March last, she presented the following appearance:—At the roof of the mouth there was a red, smooth, fungous tumour, but it was not ulcerated, and did not bleed; this tumour comprehended the whole breadth of the left upper maxillary bone, and occupied from before backwards the alveolar ridge and vault of the palate as far as the insertion of the velum palati. The whole alveolar ridge had disappeared, and was confounded with the body of the tumour, which was as large as the half of a hen's egg. Corresponding with the presumed situation of the second or third molar tooth there was an opening, furnishing a sanious, fetid pus, through which a probe might be passed deeply into the antrum. The left cheek was elevated by the tumour, which seemed to mount up to the base of the orbit in front, and to the side of the nose laterally. The globe of the eye on this side was not displaced; the patient experiences great intermitting pain in the tumour, and has been affected with head-ache, though not laterally; she coughs a little, and expectorates mucus mixed with pus from the alveolar fistula; the general health was not altered.

During the following days the little finger could be introduced into the maxillary sinus through the fistula, and feel some irregular, but smooth fungosities in the interior of that cavity, not a single point of its parietes presented the osseous resistance characteristic of a healthy state; the examination was followed by a discharge of blood; the progress of the tumour latterly had been very rapid; it had exceeded the median line to the right, and gained the inner edge of the right superior maxillary bone.

MM. Marjolin and Blandin, seeing the quick manner in which the osteosarcoma advanced, were of opinion that complete removal of the whole superior maxillary bone was necessary, and on the 18th of March, M. Blandin, in the presence of several surgeons, proceeded to the operation.

The patient was retained in a chair by two assistants, and the operator placed himself before her, having on his left all the necessary instruments arranged in perfect order, and under the care of another assistant. The left half of the upper lip was put in a state of tension between the left hand of the operator and an assistant, and an incision was made, commencing over the os malæ, below and outside the external angle of the eye, and dividing the upper lip two or three lines in front of the left commissure. The coronary branches were now tied, and the threads cut close to the knots. The external flap, sufficiently dissected back to expose the anterior edge of the masseter muscle, was committed to an assistant; the internal flap was also dissected from below up, and from without inwards, the wing of the nose was separated from the maxillary bone, and turned up; the corresponding nasal fossa opened in front, outside and below; the perpendicular process of the superior maxillary bone, and the base of the orbit, were exposed. The globe of the eye, with its cellular tissue, separated from the floor and inferior angles of the orbit, was pushed up by a spatula.

During this first period of the operation, the soft parts alone were interested; it now remained to separate the hard parts. The globe of the eye was carefully elevated inwards, together with the internal flap, while the external one was depressed in the opposite direction; a small hand-saw was now placed on the middle of the articulation of the superior maxillary with the malar bone; the flat of the blade being parallel to the median line, and directed from before backwards, regarded the anterior extremity of the inferior orbital fissure in such a manner, that the anterior angle of the os malæ was on the inner

side, and the malar process of the superior maxillary bone on the outer side of the cut.

The anterior moiety of the osseous mass placed in front of the inferior orbital fissure being thus divided, the separation was continued as far as the latter fissure, with the gouge. As the instruments were now to be directed against the inferior and inner edge of the orbit, the globe of the eye was raised outwards, and the internal flap turned to the right side. The saw being fixed on the external face of the ascending process of the superior maxillary bone, divided it obliquely from above, downwards, and from without inwards, in an oblique direction, passing through the superior external and inferior internal angles of the orbit, and directed from before backwards toward the posterior third of the spheno-maxillary fissure. The ascending process having been thus divided by the saw, the separation of the bone as far as the spheno-maxillary fissure was completed with the gouge, following precisely the ethmoido-maxillary fissure of the orbit.

The osseous portion which was to be amputated being thus separated superiorly both on the outer and inner sides, still remained attached behind the tuberosity of the maxillary bone, at the vault of the palate and the wall of the nasal fossæ. The internal flap being raised sufficiently, together with the upper lip, the left index finger was introduced deep into the mouth, which was kept open by means of a cork; the finger served to protect the velum palati, and to direct a long strong pair of scissors, which were introduced from before backwards through the nasal fossæ, each fossa receiving a blade; the septum was thus divided parallel to its base, where the vomer is very thin.

The necessary number of teeth were now extracted, and the bistoury traced on the gum and roof of the palate the line which the saw was to follow. This instrument divided the superior alveolar edge parallel to the median line, and from before backwards. The section was completed with the gouge, by which the osseous portion of the roof of the palate was divided in its whole length. The left moiety of the velum palati was now separated from the rest by means of a transverse incision, which, passing along the posterior edge of the horizontal portion of the palatine bone, was directed between the pterygoid process and the maxillary tuberosity. The soft parts being thus divided, the gouge was employed to separate the superior maxillary and palatine bones from the sphenoid, acting obliquely from above downwards, and from without inwards. The tumour was now completely isolated, it could be seized between the fingers, and when all the soft parts were cut through, its removal was terminated.

The result of this operation, in which the internal pterygoid muscle was completely exposed, was the formation of a vast cavity where the left orbit, nasal fossæ, the pharynx, and mouth, all communicated. The parts were now cleaned with a sponge, and some fragments of the orbit and palatine bone, with some fungous excrescences, were removed; the edges of the wound were now brought together with eight strong pins, on which the twisted suture was placed; the cheek did not present any sensible depression.

The consequences of this difficult and long operation did not present any thing remarkable, the termination being most fortunate; there was very little reäction, whether general or local; neither hæmorrhage nor nervous symptoms supervened. During the first few days the patient expectorated some mucus, at the beginning mixed with blood, but soon becoming yellow. On the 21st we observed over the upper eyelid and left cheek a little redness and œdema, but these were quickly dissipated. The patient, whom we could not comprehend at all at first, was soon able to make herself well understood, though the voice was nasal. Finally, she was able to leave the hospital in the beginning of May, when she presented the following appearances:—

On the cheek a simple cicatrix. In the cavity of the mouth, a sort of perforation of the velum palati, establishing a communication between the mouth and nasal fossæ, permits us to see the septum and turbinated bones. This artificial perforation is limited in front by the cheek; behind by the left moiety of

the velum palati; its edges are completely cicatrized. The left cheek is a little fallen in, and the left wing of the nose, being drawn closer to the septum than natural, diminishes a little the nostril of that side.

The examination of the tumour which was removed, perfectly confirmed the diagnosis; it was composed of true osteo-sarcomatous tissue, by which the greater part of the bone had been destroyed.

This case of complete removal of the whole of the superior maxillary bone, joined to a few other authentic ones which are recorded within the last years, proves that this operation, though in appearance dangerous and frightful, must take its rank amongst the other great efforts of the art to remove a disease otherwise inevitably mortal.—*Lancet, May 31st*, 1834.

MIDWIFERY.

47. *Destruction of the Neck of the Uterus, with complete absence of the Os Uteri. Vaginal Cæsarian Operation.*—Complete obliteration of the os uteri at the moment of labour is very rarely witnessed by accoucheurs. We find, indeed, in writers, many examples of the kind; but in most of these cases the observer has been led into error by a vicious or elevated position of the neck, which sometimes exists to such an extent, that, without very careful examination, an absence of the uterine orifice might be declared. In the present case, however, the fact of obliteration was established by several celebrated midwifery practitioners, and existed to a degree requiring the vaginal operation, which was performed with complete success.

Case.—On the 4th of December, 1833, Dr. Caffe was called upon by Madame Mauray, sage-femme, to see a lady who had arrived at her establishment the night before, and was at the full period of gestation. This lady, thirty-nine years of age, and of a good constitution, was the mother of three children, all born by easy labours. Her last accouchement took place eight years ago, and gave rise to no accident whatever. The labour-pains had been present for thirty-six hours, without having produced any serous discharge; and the midwife was unable to discover the presence of the os uteri, or even the entrance of the organ.

On making an examination, M. Caffe recognised the following particulars:—The vulvo-uterine diameter of the vagina measured five inches; its superior wall, excessively tumefied, formed a kind of hood which filled a part of the vaginal cavity; the latter was red, and not moistened by mucus; the apex of the vagina terminated suddenly, and might be compared to a cylinder closed above, without any trace of projecting body or uterine neck. Near the median raphe of the posterior wall, the finger touched a fold, about a line broad, giving the sensation of a small cord drawn tensely; but at the sides of this fold, or elsewhere, it was impossible to find the least trace of os uteri, either with the finger, or by guiding a probe-pointed stylet on the latter. During the violent expulsive efforts which took place from time to time, the pulp of the finger experienced the sense of motion communicated to it; but the uterus at the same time remained elevated, without projecting into the vagina.

MM. Hatin, Velpeau, Lenoir, and Larchet, were now called upon to examine the case, and all recognised a complete obliteration of the uterine orifice; an operation was therefore determined upon, and performed in the following manner.

The woman being placed on the edge of her bed, as in the operation for the stone, M. Caffe introduced, on the left index finger, a straight narrow-bladed bistoury, protected by a roll of linen within six lines of its point, and guarded by a ball of wax. Having arrived at the summit of the vagina, the direction of the bistoury was changed from the flat to the perpendicular position, its back being supported by the pulp of the index; and the anterior wall of the uterus

was divided, layer by layer, the incisions being made from the rectum towards the bladder, and care being taken not to extend them beyond five lines upwards. When the incisions had been carried to about one-quarter of an inch in depth, the operator arrived at the cavity of the uterus; a very dark, inodorous liquid, about four ounces in quantity, was immediately discharged.

The uterine contractions aided much the divisions made by the bistoury, and in order to avoid any danger of laceration, two lateral incisions were made with a probe-pointed bistoury, one on the right and the other to the left, extending a few lines only; at this moment a contraction of the uterus enlarged the crucial incision thus made and rendered it oval. After the lapse of an hour the labour was terminated, most fortunately, and without any laceration whatever. No foreign substance of any kind was introduced into the wound: the female was able to leave her bed on the sixth day, and on the ninth returned home.

After the cessation of the lochia, M. Caffe took the precaution of introducing on several occasions, into the wound, a gum-elastic catheter, which was there retained for a few hours each time, in order to prevent its closure. This precaution was attended with the desired effect, for since the performance of the operation, the menses have appeared twice, and been discharged without any obstacle. The cause of the obliteration in this case arose from the introduction of an irritating matter into the organ. M. Caffe was informed by the patient, that during the early months of her pregnancy, she had frequently injected, with a gum-elastic tube, a solution of ashes into the vagina, and even into the uterus. Each time this manœuvre was performed, the woman was seized with intolerable pain, and the injections gave rise to a discharge of pus from the vagina, mixed with some pellicles. The woman did not complain of any pain during the operation, which was extremely simple, and followed by no accident or inflammatory symptoms; and the division of the uterine parietes did not give rise to the slightest hæmorrhage.—*Journal Hebdom. March*, 1834.

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48. *Case of Accumulation of Air in the Uterus simulating Pregnancy.* By J. Jones of Gelly, Montgomeryshire.—On the 3d or 4th of April, I was applied to by a widow, accompanied by her daughter, an unmarried female, nineteen years of age, under the following circumstances:—The mother stated that her daughter's health had been gradually declining for some months past, that she was suspected to be pregnant, and that she, (the mother,) wished me to decide whether she was so or not. The girl, who was of a naturally robust constitution, presented the appearances of impaired health. She was considerably emaciated; her countenance was sallow; tongue furred and white; pulse 84, and extremely small. She said that she had frequent vomitings in the morning, anorexia, and constipated bowels. She attributed the commencement of her illness to her having been suddenly exposed to cold and wet during menstruation six months previous; the catamenia were suppressed, and had not since appeared. About three months after this period she first perceived her abdomen to be preternaturally enlarged, and this enlargement had progressively increased up to the time of her application to me. It was then of the ordinary size of that of a female in the seventh, or the latter part of the sixth month of pregnancy, and the uterus was distinctly felt to reach as high as the umbilicus. I applied the stethoscope to various parts of the abdomen, but no sound was discernible, having the slightest similarity to that of the placental or fœtal pulsations. The mammæ were flaccid, and the areolæ surrounding the nipples wanted that deep red colour which is so characteristic of pregnancy. A vaginal examination was positively refused; and under all the circumstances of the case, I felt incompetent to form any decisive conclusion, whether the girl was pregnant, or laboured under some uterine disease.

After the lapse of three days I was again visited by this young woman, when, to my astonishment, I found the abdomen was reduced to its natural dimensions; the uterus was no longer to be felt above the pubis, and her health, she said, was much improved, her general appearance, indeed, very clearly proving

this to be the case. The account she gave was, that on going to bed the first night after she had applied to me, she suddenly, to use her own expression, felt something burst in her inside, and instantly a profuse quantity of extremely fetid gas issued *per vaginam*, mixed, however, with a few small clots of blood. The flatus, she said, must have continued to discharge for at least two minutes, when she felt faint, and subsequently became quite insensible. The mother corroborated the testimony of her daughter, and stated such to have been the fœtor of the gas expelled, that she found it impossible to remain in the same apartment with her daughter.

I much doubted the truth of this narration, and suspecting that abortion had taken place, I determined to prevail on the girl, if possible, to allow me to make a vaginal examination, and after a great deal of persuasion, succeeded, when I instantly found that the vagina was entirely closed by the hymen, with the exception of a small orifice, certainly not half an inch in circumference, through which the catamenia had escaped,—a strong proof that the girl had never indulged in illicit intercourse with the other sex, and coupled with the other circumstances of the case, that the testimony of her and her mother was faithfully true. The girl, after this occurrence, rapidly regained her former health. The catamenia have once since appeared, and she is now, in every respect, perfectly well.—*Lancet, May* 31*st*, 1834.

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49. *On the Impediments to Easy Delivery, from some Malformations of the Fœtus.*—It has been too generally admitted, that those monstrosities only which are characterized by an excess or redundancy of parts, or by extreme malposition of these, can afford any real impediment to the expulsion of the child. A few examples will prove that this affirmation is not quite correct; but it will be proper, before particularizing them, to make an illustrative remark or two.

1. If the limbs of the fœtus be so wasted away, or so imperfectly formed, that they look rather like stumps, or like turtle-flappers, than like the ordinary lengthened extremities, the fœtus is necessarily more moveable in the liquor amnii, and must, in consequence of this, be more liable to a mal-presentation.

If, in such a case as this we have supposed, we should wish to deliver the child by turning, our diagnosis of the parts which we fell may very probably be obscure and perplexing—add to which, there may be no convenient part to lay hold of. It was in an example of this kind, that Pen was obliged to apply the crotchet upon the sacrum, and Delamotte confesses that he was once exceedingly puzzled to distinguish the different parts of a monstrous fœtus.

2. In anencephalous monsters, whose spine is found open behind, the head is usually thrown backwards, and the occiput is actually concreted with the cervical vertebræ. Such a malformation must seriously impede delivery, (if the fœtus be moderately large,) as the whole body is thereby an unpliant mass. Fortunately, these monsters are seldom carried the full time; but, even at the eighth month, they very commonly cause a tedious and painful accouchement. It is frequently necessary to effect the delivery by turning.

There are many other deformities of the fœtus, which may be unfavourable to the naturally easy expulsion of the child; such are adherences of the limbs to each other, or to the body, or of the fœtus to the secundines, (an anomaly which is frequently associated with some malformations of the fœtus itself, as eventrations, &c. and which Geoffroy St. Hilaire considers to be, indeed, the cause of the malformations,) or, lastly, an abnormal agglutination, or torsion of the navel-string. The mere death of the fœtus has been very generally supposed to render a labour less easy; and indeed the ancients believed that the expulsion was effected chiefly by the efforts of the child itself. To a certain extent, we must confess, this idea is correct; for there can be little question but that the death of the fœtus, by disturbing or arresting the utero-placental circulation, must have the effect of impairing the contractility of the womb, and should putrefaction have commenced, so as to render the flesh soft, loose, and inelastic, the fœtus must act almost as a plug, filling up the passage, and merely, per-

haps, protruded by the violent contractions of the expelling organ, without any power of accommodating itself to the different turnings. When the body is in this soft state, it does not well transmit the impulsion communicated by the uterus to the head, but often rather bends or folds upon itself, and thus presents an unfavourable part to the os uteri—a part which is very rarely protruded first in a living child. The analysis of obstetrical tables will be found to corroborate this statement. Out of 15,652 births, at the Hospice de la Maternité, 689 children were still-born—of these 689, 539 were in a putrid state, or in the proportion of 7 to 9. The following exhibits the mode of delivery in these cases:—

Born spontaneously	by the vertex	514
	hips	
	face	3
	shoulder	4
Delivered with the forceps	vertex	5
	forehead	1
Delivered by turning	vertex	7
	shoulder	3
Delivered after craniotomy		2
		539

According to this table, it appears that, in one case out of every eighteen in which the fœtus was putrid, recourse had to be made to the use of the hand, or of instruments, to effect the delivery; whereas, in the labours of living children, the proportion is a great deal lower—once in about 60 cases.

To illustrate the remarks on the occasional impediments to natural accouchement, from some malformations of the fœtus, we shall adduce an example or two.

Obs. 1. *Anencephalous Fœtus, born easily and naturally.*—A woman, 31 years of age, was admitted into the Maternity to be delivered of her fourth child. During her pregnancy, she had suffered much from cardialgia and anorexia; when admitted, the membranes had already broken and the waters freely discharged, but the labour-pains did not come on for a few hours afterwards. When the os uteri had dilated sufficiently, the presenting part of the fœtus could not be satisfactorily made out—it felt quite soft, and was at first supposed to be the genital organs, but the hips could not be traced; and, by continuing the examination, one of the arms was felt.

As the labour proceeded, the soft mass was protruded lower down, and in the middle of it, the accoucheur thought that he could feel a sort of opening, which received the extremity of the finger. The expulsion was gradually effected. On examination after delivery, it was discovered that the tumour was a large reddish fungosity which covered the entire base of the cranium, and occupied the place of the brain. The fœtus was malformed in other respects, for the anus was imperforated, and there were no traces of external genital organs; there were also only four toes on each foot.

Obs. 2. *Anencephalous Fœtus, presenting the Shoulder—Delivery by Turning.*—A middle-aged woman, pregnant of her second child, was seized with labour-pains in the eighth month. The pains had been preceded by hæmorrhage, and when the state of the parts was ascertained by "le toucher," it was found that the placenta adhered to the os uteri: higher up a hand could be felt, and, by following this, the forearm and arm might be traced; the fœtus was still alive, but very small—the delivery was effected by turning. The fœtus was monstrous, for the cranium was altogether destitute of its vault, and, in the place of the brain, nothing was to be seen but vesicular fungosities, full of serosity. It lived for a moment or two after its expulsion, but never breathed.

General Remarks.—It is important to observe that, independently of the more frequent malposition of a dead, than of a living fœtus, we have oftener the necessity of employing instruments in the one case than in the other; the fore-

going table shows that this happens about once in 38 dead labours, even when the presentation is quite normal. If the data of other institutions agree with those furnished from the Maternité, the conclusion of the ancients, previously alluded to cannot be gainsayed; and, at all events, we must admit that a living fœtus is more favourable for easy expulsion than a dead one. But, in truth, the idea, although ridiculed by Petit, and by most subsequent accoucheurs, is not a whit more improbable than a favourite one of late years, we mean that which attributes the ordinary presentation of the head to an instinctive, and, in some degree, a voluntary effort or culbute of the fœtal being to direct its head foremost.

M. Paul Dubois read a very ingenious paper on this subject to the Royal Academy, (of which an abstract is given in a late No. under the head of the Proceedings of the Institute,) but his reasonings are often fallacious, and many of the data on which they are founded are not correct. The great frequency of malpresentations in cases of deformed fœtuses cannot surely be attributed to the feebleness of the instinctive and spontaneous effort of the fœtuses, but depends much more probably on their excessive mobility in the liquor of the amnion, monsters being very generally smaller, and occupying less space than healthy children. Whenever the fœtus floats about freely in the uterus at the time of labour, the chances of malpresentation are much increased; and as it is only in the latter months of natural pregnancy that the fœtus occupies nearly the whole of the cavity of the uterus, and as the head is at this period heavier, although by a very small excess of preponderance, than the rest of the body, the reason of the most common, and therefore the natural presentation is sufficiently obvious. We do not however mean to deny in toto, the occurrence of any instinctive movements of the fœtus in utero, for we believe that they do take place, and moreover that their frequency is in proportion to the inconvenience and constraint of the position in which the fœtus chances to be placed, but these movements must be blind, and obedient much more to the operation of mere gravity than to the choice or the will of the young being. Within this limit we consider its instinct to be comprehended, that it endeavours to resist any painful or disadvantageous position, say, for example, the presentation of the face, (a presentation which is much more frequent when the child is dead, than when it is alive; the proportion being as 5 to 97;) and simply because certain muscles are thereby forcibly and distressingly extended; in consequence of this the living being struggles against it.

But surely this admission does not warrant us in saying that the fœtus instinctively chooses the position most favourable to its birth; with as much propriety we may suppose that it voluntarily turns round the occiput, so as to bring it under the symphysis pubis, during the second act of parturition; all that we can fairly infer is that it strives against any position or attitude which is painful or irksome. The ingenious doctrine of M. Dubois would therefore be more correct if it simply enounced "that the child contributes by its automatic movements, to the gliding of the head towards the most depending part, which is the cervix of the womb."—*Med. Chirurg. Rev. from Rév. Méd.*

MEDICAL STATISTICS.

50. *Statistic Views of the Mortality in Various Countries in Europe.*—An article under this head in the *Edinburgh New Philosophical Journal*, for April 1834, conducted by Professor Jameson, exhibits an interesting view of the proportional mortality in the principal European states, the difference in which is very considerable. The computations profess to be founded upon official documents obtained in late years, and the following comprises a summary of the most interesting results, which will constitute a valuable addition to the stock of medical statistics with which the pages of the American Journal has been enriched.

The proportion of deaths to the population in the Roman territory and the

ancient Venitian provinces, is 1 inhabitant in 28; in Italy generally, Greece, and Turkey, 1 in 30; in the Netherlands, France and Prussia, 1 in 39; in Switzerland, the Austrian empire, Portugal and Spain, 1 in 40; in European Russia and Poland, 1 in 44; in Germany, Denmark and Sweden, 1 in 45; in Norway, 1 in 48; in Iceland, 1 in 53; in England, 1 in 58; in Scotland and Ireland, 1 in 59.

It hence appears that the shortest duration of life does not correspond with the greatest rigour of climate. Norway, Scotland and Iceland, being much more favourable to the prolongation of life than the milder regions of southern Europe, where three deaths take place in the latter, scarcely two occur in the limits of ancient Scandinavia.

"Russia and Poland, where nature and fortune have not been lavish of the necessaries of life, enjoy however, an astonishing longevity. The population, comprising a mass of nearly sixty millions, spin out their existence almost one-half longer than that which is enjoyed by the inhabitants of Italy, and exactly twice the length of time which any one can expect to live in the capital of Austria."

"The smallest mortality in Europe occurs in maritime countries, which are in the vicinity of the polar circle, such as Sweden, Norway and Iceland. This is also the case in countries where, as in Russia, the influence of climate is not aided by civilization, and of itself is sufficient to assume long life to mankind."

"Countries where the heat is moderate, are not as might be supposed, among those which possess the advantage of a small mortality; to obtain it, they must require the benefits of a high state of social order."

"The southern countries, the mild climate of which seems to be so favourable to the human race, are, on the contrary, regions where life is exposed to the greatest dangers. In the smiling plains of Italy, the chances of dying are one-half greater than those of cold and foggy Scotland; and under the beautiful skies of Greece, the certainty of life is one-half less than among the ices of Iceland."

Estimates of the mortality in tropical regions made by Humboldt and others, shows the general pernicious influence exercised by the climate of the torrid zone, the extent of which is however different with the different races of inhabitants; thus for example in 1805, the deaths at Batavia were 1 in 11 of the Europeans; 1 in 13 Slaves; 1 in 29 Chinese; 1 in 46 Javanese. In Bombay in 1815, Europeans, 1 in 18¼; Mussulmen, 1 in 17½; Parsees, 1 in 24; Guadaloupe, 1816 to 1824, whites, 1 in 23½; Freedmen, 1 in 35; Martinique, 1815, whites, 1 in 24; Freedmen, 1 in 33; Grenada, 1811, slaves, 1 in 22; St. Lucia in 1802, slaves, 1 in 20.

One of the most interesting statistic views of the mortality in various countries, is that in which the influence of the progress of civilization is exhibited, by comparing the deaths to the population of the same country at intervals sufficiently long to admit of a decided social amelioration. The following exhibits this subject in a very striking manner.

The number of deaths compared with that of the population, was—

In Sweden	1754 to 1763,	1 in 34;	in 1821 to 1825,	1 in 45
Denmark	1751 to 1756,	1 in 32;	in 1819	1 in 45
Germany	1788	1 in 32;	in 1825	1 in 45
Prussia	1717	1 in 30;	in 1821 to 1826,	1 in 39
Wurtemberg	1749 to 1754,	1 in 32;	in 1825	1 in 45
Austria	1822	1 in 40;	in 1828 to 1830,	1 in 43
Holland	1800	1 in 26;	in 1824	1 in 40
England	1690	1 in 33;	in 1821	1 in 58
Great Britain	1785 to 1789,	1 in 43;	in 1800 to 1804,	1 in 47
France	1776	1 in 25½;	in 1825 to 1827,	1 in 39½
Canton of Vaud	1756 to 1766,	1 in 35;	in 1824	1 in 47
Lombardy	1759 to 1774,	1 in 27½;	in 1827 to 1828,	1 in 31
Roman States	1767	1 in 24;	in 1829	1 in 28
Scotland	1801	1 in 44;	in 1821	1 in 59

From all which it appears that the mortality has diminished.

In Sweden, nearly ½d in 61 years; in Denmark, 2-5ths in 66 years; in Germany, 2-5ths in 37 years; in Prussia, 1-3d in 106 years; in Wurtemberg, 2-5ths in 73 years; in Austria, 1-13th in 7 years; in Holland, ½ in 24 years; in England, 4-5ths in 131 years; in Great Britain, 1-11ths in 16 years, in France, ½ in 50 years, in Canton of Vaud, ½d in 64 years; in Lombardy, 1-7th in 56 years; Roman States, ½d in 62 years.

The principal towns in Europe present the same gradual diminution, as will be evident from the following proportions estimated for different epochs, viz.

Paris - - - - - -	in 1650, 1 in 25	inhabitants;	in 1829, 1 in 32
London - - - - - -	1690, 1 in 24	do.	in 1828, 1 in 55
Berlin - - - - - -	1765, 1 in 28	do.	in 1827, 1 in 34
Geneva - - - - -	1560, 1 in 18	do.	in 1821, 1 in 43
Vienna - - - - - -	1750, 1 in 20	do.	in 1829, 1 in 25
Rome - - -	in 1762 to 1771, 1 in 21	do.	in 1828, 1 in 31
Amsterdam -	1761 to 1770, 1 in 25	do.	in 1828, 1 in 29
Cambridge - - - -	in 1811, 1 in 41	do.	in 1821, 1 in 58
Norfolk - - - - -	1811, 1 in 50	do.	in 1821, 1 in 59
Manchester - - - -	1757, 1 in 25	do.	in 1821, 1 in 58
Birmingham - - - -	1811, 1 in 30½	do.	in 1821, 1 in 43
Liverpool - - - -	1773, 1 in 27	do.	in 1821, 1 in 41
Portsmouth - - - -	1800, 1 in 28	do.	in 1811, 1 in 38
Petersburg - - - -	1768, 1 in 28	do.	in 1828, 1 in 48
Stockholm -	in 1758 to 1763, 1 in 19	do.	in 1827, 1 in 26

The causes enumerated, as tending to an increase of mortality, are chiefly—

The marshy humidity of the air, especially in hot countries; the effects of privations on the lower classes of society; the scarcity of the means of subsistence, or, at least, their rise in price as compared with the wages of labour; pestilential diseases; unfavourable seasons, especially abrupt changes in the temperature; the closeness, dirtiness, and unhealthiness of private houses, prisons, infirmaries, and hospitals; the excessive use of spirituous liquors, and indulgence in drunkenness; unwholesome or unremitting labour, especially in childhood and youth; lastly, war, *but less in consequence of battles than forced marches*, and frequently the mal-administration of armies.

The chief causes which in connexion with the progress of civilization have tended to diminish mortality, are—the draining of marshes, and the embanking of streams and rivers; the favourable division of public wealth, which affords to each individual labour and subsistence; the abundance and good quality of the food of the people; the attention bestowed on children from birth, and continued in schools, manufactories, and public establishments; vaccination and sanitary arrangements, which prevent the importation or development of contagious diseases; the low price of the productions of industry, allowing the less affluent classes to enjoy those habits of cleanliness which were equally unknown and beyond their reach, and furnishing them with the means of escaping the intemperateness of the season; lastly, the successful measures adopted for diminishing the insalubrity of towns, and especially colleges, theatres, hospitals, prisons, churches, and other public establishments, which, in many places, are still without the means of ventilation, heating and cleaning.

The editor concludes his interesting observations upon the results of the social ameliorations which have been gradually introduced into European countries during the last century by the following striking conclusions. "If we collect England, Germany, and France in one group, we find, that the average term of mortality which, in that great and populous region, was formerly 1 in 30 people annually, is not at present, more than 1 in 38. This difference reduces the number of deaths throughout these countries from 1,900,000, to less than 1,200,000 persons; and 700,000 lives, or 1 in 83 annually, owe their preservation to the social ameliorations effected in the three countries of Western Europe, whose efforts to obtain this object have been attended with the greatest success."

"The life of man is thus not only embellished in its course by the advancement of civilization, but is even extended by it, and rendered less doubtful. The effects of the amelioration of the social condition are to restrain and diminish in proportion to the population, the annual number of births, and in a still greater degree that of deaths; on the contrary, a great number of births, equalled or even exceeded by that of deaths, is a characteristic sign of state of barbarism. In the former case, as man in a mass reach the plenitude of their physical and social development, the population is strong, intelligent and manly; whilst it remains in perpetual infancy where generations are swept off without being able to profit by the past, to bring social economy to perfection."

51. *Statistics of Lithotomy at the Hospital of Incurables, at Naples, for thirteen years.* By SALVATORE DE RENZI, M. D.

	OPERATED ON.				AGE.		
Years.	Men.	Women.	Cured.	Died.	Infancy.	Manhood.	Old Age.
1821	27	0	23	4	12	11	4
1822	28	0	26	2	12	12	4
1823	38	1	31	3	14	15	5
1824	55	2	32	5	15	16	6
1825	38	0	26	4	14	15	1
1826	35	2	32	5	17	17	2
1827	18	1	12	7	7	9	3
1828	25	0	19	6	10	14	1
1829	35	1	31	5	16	18	2
1830	32	3	29	6	15	17	3
1831	31	1	39	2	17	12	3
1832	22	0	17	5	14	6	2
1833	38	1	33	6	23	10	6
Totals.	389	12	341	60	185	174	42

The whole number operated on is thus 401, of whom 60 died, 14 96-100 per cent. or 1 in 7 nearly. In this number, there are comprised two operated on by the method of Scarpa; all the others were operated on by the lateral method modified.

The period during which the patients had laboured under stone, varied from three months to sixteen years. The time of cure was from six days to a month. In 1827, an epidemic verminous fever broke out, which destroyed more than a third of those operated on.

In the bodies of the dead, traces of anterior diseases of the kidneys, bladder, or intestines, were almost always found.

The above table relates to those operated on in the hospital, who are all poor, badly nourished, and badly nursed. The rich are operated on at their own homes.

Every surgeon has a right to operate at the hospital, except one who has been prohibited on account of his proved unskilfulness. It is on that account that the mortality rises to 1 in 7, for skilful surgeons lose only 1 in 20, and M. Petrunti has lost only 1 in 25.—*Gaz. Med. Feb.* 1834.

CHEMISTRY.

52. *New Alkaloids.—Sarsaparilline.* "This substance (says M. Thubeuf) is regarded as the active principle of sarsaparilla. Like the original root, it communicates to water the property of frothing when agitated, and gives it that sharp, bitter taste which we find in the aqueous or alcoholic infusions of sarsaparilla. When examined by the microscope, it presents radiated crystals, the layers of

which converge toward their extremities, and it has no action whatever upon turnsole paper. Sarsaparilline, when pure, is white, without odour, and, if it contain no water, is tasteless. It is little soluble in cold water, but the whole is taken up by boiling water, which throws it down again as it grows cold. It is soluble in alcohol, either cold or warm, and the substance may be crystallized in this manner by evaporation. It may be precipitated from its alcoholic solutions by the addition of a little cold water. This alkaloid is insoluble in ether, even at the boiling point, but is very easily dissolved in a warm mixture of alcohol and ether in equal quantities.

"*Atrophine.*—This substance, (says MM. Geiger and Hesse,) already noticed by Brande, has been obtained from the Atropa belladonna. It has presented identical properties when obtained from the same part of the plant by different processes. It is white, and crystallizable into bright, transparent prisms, which have a tendency to group together; at the ordinary temperature, water takes up only a hundreth part of the mass. The aqueous solution of atrophine renders turnsole paper blue, when reddened by an acid. It acts on the organ of vision in the same way as belladonna, and even a very weak solution is sufficient to dilate the pupil, which remains in that state for a considerable time. Chlorine has very little action upon it, and it seems to form sub-saline compounds with the acids. The aqueous infusion of atrophine forms an abundant white precipitate with the aqueous infusion of galls, and it forms an orange-yellow precipitate with the hydrochlorate of gold.

"*Hyosciamine.*—This alkaloid is most easily obtained from the seeds of the Hyosciamus niger. It crystallizes into transparent, colourless needles. Its taste is acrid and disagreeable, like that of tobacco, and it has a powerfully poisonous action. The smallest quantity, placed on the eye, produces permanent dilatation of the pupil; in an anhydrous state it is not alkaline, but becomes so by the addition of a small quantity of water. The salts of hyosciamine are neuter, they are partially crystallizable, and are as poisonous as the plant itself.

"*Daturine.*—This alkaloid has been extracted by the same chemist from the Datura stramonium. It readily crystallizes into regular prisms, which are colourless and brilliant. It is inodorous. The taste is at first slightly bitter, and then becomes very acrid like that of tobacco. Daturine is a highly poisonous substance; one-eighth of a grain was enough to poison a sparrow in three hours. When placed on the eye, it occasions a strong and permanent dilatation of the pupil.

"*Solanine.*—This substance, already discovered by several French chemists in the Solanum nigrum, Solanum dulcamara, and the Solanum mammosum, has been recently found in the potato by M. Otto of Brunswick. He obtained the alkaloid in the following manner:—The potato buds were first treated in water, acidified by sulphuric acid; he then separated the sulphuric and phosphoric acids, with the extractive matter, by acetate of lead; the colourless liquor which remained was saturated with lime water, and the precipitate boiled in alcohol; and the product thus obtained was purified by frequent washing in alcohol. In order to determine its action on the animal economy, M. Otto tried the effects of this substance upon rabbits, and found that it should be ranged amongst the acrid narcotic poisons. One grain of solanine was sufficient to kill a rabbit in six hours; a second rabbit, which was much stronger than the former, was destroyed in nine hours after having taken three grains. It exercises a remarkable paralyzing effect on the hinder extremity of the animal before occasioning death, and this paralysis may be produced in horned cattle, by simply feeding them on the washings of potato-tops. This substance is white and powdery, and turns blue turnsole paper which has been reddened by the action of an acid. The greater part of its salts assumes an aspect like gum upon desiccation.

"*Colchicine.*—This alkaloid crystallizes into delicate needles; its flavour is very bitter; when placed in the nares it does not excite sneezing, while the smallest portion of veratrine occasions a violent fit. Colchicine is a strong poison; one-tenth of a grain dissolved in alcohol was given to a cat six weeks

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old; the animal began at once to foam at the mouth; after the lapse of an hour she passed abundant alvine evacuations, and vomited; she soon became feeble, unable to walk steady, fell down on the ground, rolled about, and was agitated by convulsive motions; these symptoms increased in severity; the animal died in twelve hours. On examining the body after death, the intestinal canal was found to be violently inflamed, and blood was effused into its tissue through the whole extent; one-twentieth of a grain of veratrine was given to a younger cat, in order to judge of its effects by comparison; they were very inergetic; the animal quickly became feeble, was seized with convulsions, fell on the ground, and died within ten minutes. After death nothing remarkable was discovered except inflammation at the upper part of the œsophagus. This portion of the canal was not inflamed in the cat poisoned by colchicine.

"*Aconitine.*—M. Geiger has found this alkaloid in the leaves of the aconitum napellus; it does not seem susceptible of crystallization. When perfectly pure, it is white, grained, and forms a colourless, transparent mass. Its taste is bitter, then acrid, but the acridity is not strong or permanent. In this respect it differs from the plant, whose taste often remains twelve hours, leaving the tongue quite benumbed. The acrid principle is united with the aconitine, from which it may be separated by repeatedly combining the alkaloid with acids. When this substance is completely deprived of the acrid principle, it is excessively poisonous; the one-fiftieth part of a grain, dissolved in alcohol, was sufficient to kill a sparrow in a few minutes, and one-tenth of a grain destroys a small bird with the rapidity of lightning. When placed on the eye it produced dilatation of the pupil, but the effect is of short duration."—*Journal de Pharmacie, February and March,* 1834.

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53. *New Researches on the Composition of the Serum of the Human Blood.* By F. Boudet.—The object of these researches is to determine the nature of the relation between the globules of the blood and the colouring matter and the serum, and to ascertain the chemical constitution of the latter fluid. M. Boudet takes a general view of all the representations which have been given of the nature of the globules, from the time of Leeuwenhoeck to that of Hewson, Home, Prevost and Dumas, Young, and lastly, Raspail, Donné and Muller. It is well known that Hewson represented the globules as flat orbicular or circular bodies, like coins, but with prominent centres, and that the observations of Prevost and Dumas are in favour of the same idea. Home, on the other hand, inferred, from what he conceived careful microscopic observation, that they were minute spherical bodies, consisting of a central globule, enveloped in colouring matter during life. This idea was also maintained by Young, who considered the central *umbilicus* or prominence as an optical illusion.

The general tendency, in short, of different observations on the constitution of these minute and problematical bodies appears to be, that they consist of two concentric spheroids. The separate and essential existence of the inner spheroid appears to be established, especially by the experimental observations of MM. Prevost and Dumas, and M. Donné and M. Muller. Thus the first inquirer found, that, if dried blood was diluted in a saline solution, the central globules were easily recognised; and that, conversely, when the blood was diluted with pure water, the colouring matter was dissolved, or rather divided in this fluid, and the internal spheres appeared then to be colourless. Donné found, among numerous microscopical observations, that whether he operated on human blood, or that of the frog, the globules were effaced, indeed, when diluted with water on a glass plate; but that, if he waited till the colouring matter had spread over the margins of the plate, he then observed these globules colourless and transparent floating in the fluid, and that it is absolutely impossible to dissolve them in a large quantity of water within a space of more than twenty-four hours. M. Donné, in short, regards the globules as minute bodies of a lenticular shape, formed of a fundamental tissue of fibrine, in the interstices of which albumen and colouring matter are deposited.

Lastly, in a letter recently addressed to the Institute, and inserted in the *Annales des Sciences Naturelles*, (*October*, 1832, p. 222,) M. Muller adds the following confirmatory statements, derived from the blood of frogs. "The globules of blood are composed of a colourless *nucleus* and red crust, which undergoes gradual solution in pure water, but not in salt or sugared water. After the solution of the red crust in water, the central *nuclei* remain insoluble in simple water, but are dissolved in alkaline water. The most effectual mode of detaching these *nuclei* from their red capsules, is to mix a drop of acetic acid with a drop of blood from a frog, or any other animal, and to observe the effect microscopically. The red crust is instantly dissolved in the acetic acid, while the elliptical *nuclei* remain, and may be examined in their proper form."

From all these testimonies, combined with his own observation, M. Boudet infers, that, whatever discordance prevails on other points, it is certain that the globules of the blood consist of two substances—a colourless and a red colouring matter, and that in configuration they form two concentric spheroids. To us it appears from the facts more natural to represent them as consisting of a central spheroid, and an inclosing spheroidal capsule—both concentric.

On the diameter and size of these globules, M. Boudet merely repeats the inference formerly established by several observers, that though these diameters vary in different species, and much more in different animals, they are invariably the same in the same animal. This might demonstrate the impropriety of transfusing the blood of an animal of one species into the vessels of an animal of a different species. The odorous principle of the blood, he is of opinion, depends on the presence of some volatile acid substance, analogous to those which were found by Chevreul in adipose substances. This opinion derives some probability from the fact, that M. Matteucci, in distilling the serum of goat's blood with sulphuric acid, obtained a mixture of lactic and caproic acid.

On the important question, as to the state in which the fibrin exists in blood, M. Boudet rejects as untenable, the common opinion, that this principle forms part of the globules, partly in consequence of the experiments of M. Le Canu on the colouring matter of the blood, and partly by reason of the experiments of M. Muller, which are entirely at variance with such a supposition.

This observer maintains that the fibrin in the coagulable part of the blood is not contained in the globules, but is dissolved in the serum. To demonstrate this inference he selects the blood of recent frogs, the globules of which are too large to pass through the pores of filters. Having amputated the thigh of a frog, he causes the blood to fall on a moistened filter, and mixes with it an equal quantity of pure water, or rather of sugared water. There escapes a clear liquid, in which is quickly formed a clot of fibrin, which is speedily condensed and becomes white. The globules in the meantime remain on the filter, unchanged and undissolved if sugared water have been mixed with the blood. From this experiment it results, that the coagulation of the blood is not justly explained by referring it to aggregation of the globules. This experiment succeeds in summer, spring, or autumn, but not in winter, because the blood of frogs does not coagulate at this season.

These experiments, M. Boudet infers, concur in showing that the fibrin exists in the *serum* in a state of solution.

M. Boudet has further detected in the blood, at least, its *serum*, the presence of three principles,—two entirely new, which had hitherto escaped analytical examination; and he is led to express the opinion that, as it was only by operating on very large quantities that he discovered the principles alluded to, it is necessary to have recourse to a new mode of analysis, as the circulation and repair of the blood are so rapid that any given quantity taken at any particular point of time may contain mere traces of the substances found to exist. He further thinks, that, if examined in this manner, the blood must contain not only the materials of all the organs, but even the characteristic principles of the different secretions, as cholesterine, urea, &c.

The substances next found in the human blood by M. Boudet are,—1, an alkaline soap; 2, cholesterine; and 3, a fat substance hitherto unknown, and to which he applies the distinctive name of *seroline*.

These substances were obtained in the following manner.

A large quantity of *serum*, formed by the combination of three blood-lettings, being dried by a gentle heat, washed by boiling water, and dried again, was reduced to powder, and treated with boiling alcohol. The alcoholic liquors which had been colourless, became turbid on cooling, and from them were precipitated very slowly white *flocculi*, separable by the filter. These flocculi, which presented the aspect of little adipose pearly plates, slightly translucent, but without crystalline form, were the new principle denominated *seroline*.

Viewed by the microscope, these adipose whitish pearly plates seem to be formed of filaments, swelling at intervals with minute white opaque globules, which give them the aspect of chaplets or strings of beads.

Seroline melts at + 36° = 97° F. evinces no reäction on reäcting papers, and reddens, like cholesterine, in contact with concentrated sulphuric acid.

It does not form an emulsion with cold water, and if warmed it swims on the surface of the fluid in the form of a colourless oil.

It is readily dissolved by sulphuric ether even in the cold. It is in no degree affected, on the contrary by alcohol in the cold, and traces only are dissolved in that fluid at 36° = 92° F. and at ebullition.

Subjected to warm *aqua potassæ* for six hours, it undergoes no change, and hydrochloric acid causes no precipitate in such alkaline liquor.

Long heated with nitric acid it is not dissolved, but becomes soluble in *aqua potassæ*, which then acquires a brown colour.

Distilled at the lamp in a glass tube, it emits a very characteristic odour, furnishes alkaline vapours, is partly volatilized, and leaves a carbonaceous residue.

The alkaline soap and cholesterine were obtained in the following manner.

The filtered liquor distilled in the sand-bath, and reduced to one-fourth of its volume, exhibits, upon cooling again, a milky turbidity, yet without remarkable precipitate.

The evaporation being continued, furnishes a residue of a yellowish-brown aspect, of the consistence of turpentine, forming with cold water an emulsion of a bitter taste, and a smell analogous to that of the phosphorated fat of the brain.

This residue triturated cold with alcohol at 36° = 97° F. gave it a yellow colour, and became attached to the tube in the manner of a soft resin. The alcohol was renewed till it ceased to acquire colour, and the mixture was then separated into two distinct products; one soluble in alcohol, corresponding to the only matter of M. Le Canu, the other insoluble in the fatty matter of the brain.

From the first of these left to itself were precipitated, at the end of a certain period, minute crystalline plates, of an appearance analogous to that of cholesterine, and which, indeed, present no material difference of character from that substance.

When the serum after this precipitation was decanted and evaporated to dryness, it furnished a viscid residue of a bitter taste, very soluble in alcohol, and retained some cerebral fat, which was afterwards detached as far as possible by the aid of alcohol, at 22°= 72° F., which appeared to M. Boudet to exercise no sensible influence on the substance. Lastly, he dissolved it in ether, which separated from it some traces of saline matters.

Thus purified, this new product was soft, sensibly transparent, of a bitter saponaceous taste, a little altered by the taste of the phosphorated fat, very soluble in alcohol and ether, sensibly soluble in water, cold or hot, and rendering it mucilaginous, like a genuine soap, and speedily restoring the blue colour to turnsol, reddened by acid. From these characters M. Boudet felt it impossible to mistake this substance for an oily matter, and most probably in the shape of

a genuine soap. He afterwards confirmed this inference by the addition of hydrochloric acid to the watery emulsion upon which drops of oil came to the surface. He regards the soap as a probable mixture of oleic and margaric acids.

M. Boudet regards the oily matter of M. Le Canu as partly alkaline soap, partly *seroline* and cholesterine.—*Journal de Pharmacie, June,* 1833, *and Edinburgh Med. and Surg. Journ. April,* 1834.

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54. *Composition of Serum—Serolin.*—M. Boudet remarks, that except the saline constituents of the serum of human blood, and the extractive matters, imperfectly known by the names of ozmazome, impure lactate of soda, muco-extractive matter, &c. the only well defined substances shown by analysis to exist in the serum are albumen, the fatty matter of the brain, urea, and an oily matter.

M. Boudet did not examine the extractive matters dissolved by water from dried serum, but only those products which were obtained from dried serum by boiling alcohol, after the water had dissolved such as were soluble in it.

Having obtained a considerable quantity of serum, dried it, and dissolved all that was soluble in boiling water, it was again dried, and treated with boiling alcohol: the mixed alcoholic solutions were colourless. The mixture became turbid by cooling, and deposited, though very slowly, white flocks, which were separated by the filter; these had a fatty pearly lustre: they were not crystalline, but small and slightly translucid plates. In M. Boudet's opinion these plates constitute one of the principles of serum, and he calls it *serolin.* This substance, when examined by the microscope, appeared to be formed of small filaments, with small, white, opake globules, which gave them the appearance of strings of beads; it fuses at about 134° Fahr.; does not act upon test papers, but, on the contrary, like cholesterine, it reddens concentrated sulphuric acid. It does not make an emulsion with cold water; and if it be heated, it floats like a colourless oil on its surface. Sulphuric æther dissolves it easily, even when cold; on the contrary, alcohol of 0.837 dissolves a trace of it when boiling, and none when cold. Heated for six hours in a solution of potash it suffered no change, and muriatic acid added to the liquor produced no turbidness.

Neither muriatic nor acetic acid, whether cold or hot, produced any change in this substance: when long heated with nitric acid it was not dissolved, but became soluble in a solution of potash and rendered it brown.

Distilled by the lamp in a small glass tube, it emitted a very characteristic odour, gave alkaline vapours and a light coaly residue; part of it seemed to volatilize. The small quantity obtained did not allow of performing more experiments; but the above, M. Boudet thinks sufficient to establish serolin as a new immediate principle, and to justify the name which he has given it.

The alcohol from which the serolin had been separated by the filter was distilled in a salt-water bath, and when reduced to one-fourth of its bulk, the distillation was stopped and the liquor allowed to cool. It soon became turbid, but no material deposit was formed.

By continuing the evaporation in a capsule, a slightly yellowish brown residue was obtained: it was of the consistence of turpentine, and formed an emulsion with cold water. Its taste was acrid, and its smell similar to that of the phosphorized fatty matter of the brain.

This residue triturated with alcohol of sp. gr. 0.837, rendered it yellow, and attached itself to a tube like a soft resin. Fresh alcohol was added until it ceased to acquire colour, and two products were thus separated; one, soluble in alcohol, was of course the oily matter already alluded to, and the other was the fatty matter of the brain; this was insoluble in cold alcohol, but dissolved by it when boiling, and in æther, except a very small portion of a rosy matter, which was too minute for examination. It crystallized in brilliant laminæ, did not act upon coloured test papers, was unalterable by alkalies, made an emulsion with cold water; and its properties were perfectly similar to the cerebral fat, as described by Vauquelin and Chevreul.

The alcoholic solution, exposed for some time to spontaneous evaporation,

gave small crystalline plates resembling cholesterine in appearance. On comparing their properties, it was found that they agreed nearly in their fusing point at about 278° of Fahr.; but they differed in this respect, viz. that pure cholesterine is crystalline, while this substance was in flocks, and had no crystalline splendour: this difference, however, appeared to depend upon its retaining a little phosphorized fatty matter, the odour of which it retained; and on mixing pure cholesterine with this substance, the mixture had the same properties as the supposed cholesterine of the blood. M. Boudet admits, however, that further experiments are required to ascertain positively that the serum of the blood contains cholesterine.

After the separation of this supposed crystallized cholesterine, the alcoholic solution was evaporated to dryness: it furnished a viscid residue, of an acrid taste, and soluble in alcohol. It still, however, retained cerebral fatty matter, which was separated as much as possible by alcohol, of sp. gr. 0.915, this appearing to have scarcely any action upon it: lastly, it was dissolved in æther, which separated from it traces of saline matter.

Thus purified, this new product was soft, somewhat transparent, of an acrid and soapy taste, slightly altered by phosphorized fatty matter, very soluble in alcohol and æther, and sensibly dissolved in water either cold or hot, and rendered it frothy like a true soap. Lastly, it restored the blue colour of litmus reddened by an acid; it appeared therefore to be a true soap. To decide this question, it was dissolved in hot water, and a few drops of muriatic acid were poured into the solution: abundant flakes were separated from a transparent liquid, and melted at the surface with the appearance of an oil. This oil after washing with hot water, retained no muriatic acid, reddened moistened litmus paper strongly, made no emulsion with water, and dissolved rapidly in alcohol and æther, rendering them acid: it immediately combined with soda, and reproduced a solution resembling common soap: it was probably a mixture of oleic and margaric acid.

M. Boudet remarks, that numerous attempts have been made to discover bile in the blood, and he further states that the existence above described of an alkaline soap, and probably of cholesterine, show that bile, or the various substances of which it is composed, are actually found in the blood.—*The London and Edinburgh Philosophical Magazine, &c. February*, 1834, *et Ann. de Chim. et de Phys. tom. lii. p.* 337.

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55. *Presence of Azote in all Seeds.*—It was known that some seeds contained azote; wheat is a striking example of this, since it furnishes gluten, a substance containing a large proportion of azote; but no one has hitherto announced that all seeds contain an animalized matter.

M. Gay-Lussac, has subjected a great number of seeds both in their natural state and deprived of their husk, to dry distillation and he has not found any which does not yield ammonia, either immediately or on the addition of some lime.

Many seeds, as rice, yield on distillation very acid products, whilst beans and most of the leguminous seeds furnish very ammoniacal products; but on adding lime to the former, the presence of ammonia is readily demonstrated.

From this M. Gay-Lussac concludes that in general, a grain without its envelope, may be considered as formed of two parts, one vegetable, which yields an acid product; the other animal yielding an ammoniacal product. Thus the acid or alkaline character of the product depends upon the predominance of one of these two matters over the other.—*Annales de Chimie, May*, 1833.

AMERICAN INTELLIGENCE.

Medical Education in Georgia. [Extract of a Letter from PAUL F. EVE, M. D. Professor of Surgery in the Georgia Medical College, to the Editor.]—With respect to the state of our profession in Georgia of which you requested me to inform you, I will observe that we hope a favourable change is about to be exercised by our medical college in this place. Six years ago a medical institution was attempted here under the appellation of a Medical Academy, by Dr. Antony, now our professor of midwifery. This not succeeding, or at least not being encouraged by a reciprocity of favours from the medical institutions of our country, the charter was extended by the legislature of 1829–30, to the power of granting diplomas under the same requisitions as other medical colleges. As a college, the first course of lectures was delivered by the six professors in the winter of 1832–3. Our class consisted then of twenty-eight or twenty-nine students. Four alone of that number were candidates, and the degree of M. D. was conferred upon them by our president last April. At the request of our friends, the application, (on account of the excitement in politics,) for pecuniary aid to the legislature, was withdrawn for this year. Our second session opened with a class of thirty-five—one of whom was virtually expelled the college during the course of lectures for immoral conduct; eighteen were expected to become candidates for the degree; seventeen however, only handed in theses. Of this number fifteen passed a satisfactory examination.

Our last legislature liberally endowed us with $10,000 cash, and land to the value of about $5,000 more. We have $5,000 from the city council for our services to the city hospital for ten years—and a lot has been given us on which our building is now being erected. Besides this, the faculty have raised $6,000, and have despatched it with an agent, Professor Dugas, to Europe, for apparatuses, &c. &c.: and another professor expects to leave here during the summer for the north to increase our chemical apparatus, and to attend to the interior arrangements of our building. The plan we have adopted is Grecian doric, seventy by seventy-six feet; six fluted columns, portico, dome and stucco-work. Two lecture rooms on first floor with laboratory and library; one above, with museum, dissecting room, &c. The contract is for the sum of $14,650; to be in readiness for the reception of the class in October next, and completed by 1st of next March.

Besides this medical college, we have a board of physicians which assembles annually at the seat of government in Milledgeville, whose duty it is to examine candidates for licences to practice medicine and surgery in the state. This body has the power to examine a candidate even with a diploma. It is thought, however, our penal code is deficient on this point; we have still quacks among us, but comparatively few. An application from the *Thomsonians* last winter was ridiculed in our legislature, and I believe the publication with respect to the licence to practice in the state, induced the well-known impostor Whitlaw, to leave our city quite suddenly.

As the graduates of our first commencement were not furnished to you, and were not published, I will first give you a list of them for the Journal, and if you can find room for them in the next number, you will very much oblige us and your humble friend.

At the first commencement of the Medical College of Georgia, held the 17th

of April, 1833, in Augusta, the following gentlemen having complied with the requisitions of the institution received their diplomas.

Edward A. Eve, of Georgia, on Dyspepsia.
T. W. Grimes, of Georgia, on Dysentery.
Isaac Bowen, of Georgia, on the Blood, *in Greek*.
J. M'D. Borders, of Georgia, on Asthma.

At the commencement held in the Baptist Chapel on April the 16th, 1834, in Augusta, the following gentlemen received the degree of doctor of medicine.

A. W. Jones, of Georgia, on Revulsives.
M. W. Peters, of Georgia, on Bilious Fever.
B. D. Brewster, of Georgia, on Gastritis.
William Gilbert, of South Carolina, on Pleurisy.
D. Day, of Georgia, on Scarlatina.
J. C. Cobb, of New York, on Injuries of the Head.
Y. B. Olive, of Georgia, on Dropsy.
Jon. Toole, of South Carolina, on Remittent Fever.
James M'Lester, of Georgia, on Indigestion.
S. H. Brewster, of Georgia, on Goitre.
J. W. Earle, of South Carolina, on Typhus Fever.
Horace Neison, of Ireland, on Medicinal Effects of Cold.
E. W. Richardson, of Georgia, on Syphilis.
A. B. Greene, of Georgia, on Asiatic Cholera.
Paul H. Earle, of South Carolina, on Hydrocyanic Acid.

Dr. Brewster proposes pressure for the cure of goitre; by means of two springs coming from back of neck with pads so as to operate laterally upon the tumour, and lift it as it were from the trachea.

Dr. Paul H. Earle's experiments with the prussic acid have led him to fear bad effects from a dose of seven drops, prepared after the method of Scheele; he has himself taken that quantity, but laboured under unpleasant symptoms for some time.

Augusta, April 17th, 1834.

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Case of Spinal Irritation.—The following case possesses peculiar value, from the relator, Dr. Andrew Nichols, of Massachusetts, being himself the subject of it. "To the correctness of Teale's essay," remarks Dr. N. "so far as it describes my own case, I can bear the most decided testimony. Several of the symptoms are common to this and other very different diseases; but, whenever we meet with any of these symptoms, the spine should be carefully examined, and, if a tender spot or spots be found, this tenderness must be cured before we can remove the complaint. If the disease should prove complicated, then, indeed, even removing this tenderness may not cure, although it will probably greatly alleviate the suffering and pain. In regard to the means of doing this—leeching, cupping, and blistering—recommended by Teale, I can also speak decidedly in favour of their efficacy. At a time when both my arms were so lame and painful that I could use them only with the greatest difficulty, four leeches, applied to the lower vertebræ of the neck—even before they dropped off—removed this lameness almost entirely. Like effects followed cupping and blistering. But the irritation would soon return, and acquire a repetition of the remedies. In this way the complaint was kept in check, but little, if any, progress was made towards recovery. Teale does not tell us the cause of this, which I soon found to be the following of one of his own directions—the confining myself most of the time to a horizontal position!—the real cause of the sudden return of the irritation, being continued *pressure* on the spine. The sufferer from this disease cannot lie long on his side, because the nerves of the

arms, sides, hips, or lower extremities—the seat of the neuralgia—cannot bear pressure, but are made immediately painful by it. Hence the patient *involuntarily* turns on his back—pressure is consequently made on the seat of the disease; but, as this part is seldom the seat of much pain, the mischief is not readily discovered. He perhaps, if worn out with watching, sleeps. The spine is no longer relieved by the little motion he gives himself while awake. The pressure is continued perhaps an hour or two; and he awakes with all his neuralgic affections aggravated in a tenfold degree. It is only by the greatest effort that he can change his position. His back is still the easiest part; but there is acute pain, numbness, soreness, and all the protean forms of neuralgia, throughout the course of the nerves, which proceed from those tender parts of the spine, suffering from pressure. Having satisfied myself of these facts, it became my study to protect the spine from pressure. By the careful adjustment of featherbeds and pillows, while awake and on my guard, a tolerably easy position could be obtained and preserved for a short time. But sleep would invariably disturb this comparatively easy position, permit pressure on the tender parts, and restore the irritation and all its consequent mischiefs. I was therefore compelled to consider the direction in the books, for confining the patient to horizontal position, erroneous. I now sought relief by sitting up as much as possible. Such became my dread of the bed, from the increased uneasiness which invariably met me there, that for several days I sat up eighteen out of the twenty-four hours. Œdema of the lower limbs came on, for the relief of which recourse was had to bandages. In this way, by continuing the blisters and leeching, I slowly gained on the complaint. In the mean time, I had turned my attention to Dr. Arnott's hydrostatic bed—believing this, if, in reality, all that the journals describe it to be, the all-important means of curing this complaint in the most expeditious manner. I accordingly put in motion a train of operations, which, on the 27th ult. put me in possession of one in complete order. It proved all that I had anticipated. At nine o'clock, P. M. I threw myself upon it, and laid more at my ease than I had been in any position since my confinement, for nearly twelve hours—having had during that period nearly six hours of quiet sleep, without any increase of neuralgia. From that hour I have found myself constantly and regularly improving. Leeches or blisters have not since been used. The whole extent of the spine has been well rubbed twice a day with the following liniment:—℞. Tr. opii, Ol. oliv., Ol. terebinth.—equal parts.

"The lameness of my limbs is nearly removed. The urine, which, up to March 1st, had been during my confinement high-coloured, depositing a thick sediment, resembling brick-dust, and which stained the white earthen vessel in which it stood a short time, of a bright crimson colour, is now clear, and no longer deposites any sediment. I have indulged my appetite with a tolerably generous diet. Food digests well, which, by the way, has been the case throughout—having always relished food, excepting occasional periods of nausea from medicine. The antiphlogistic regimen was, however, rigidly adhered to until after the hydrostatic bed was obtained.

"I am now convalescent, gaining strength hourly. In reviewing the history of my case, I am inclined to attribute the commencement of spinal irritation to a sudden injury of the back, by jumping down from a block about two feet high, upon the ground. A sudden pain seized me in the back, which remained considerably lame for several days.* From this time some trifling soreness about the sacrum, lameness of the hips and shoulders, was felt daily. This, however, was but little noticed. During the last week in January, and the first week in February, these symptoms were gradually aggravated, and attendance on my various professional and other duties, became irksome, and I felt myself compelled to give them up. I now used liniments to the limbs, took purgatives, colchicum, and other medicines, for *rheumatism*—lounged on sofa, *easy chair*, or bed—grew constantly worse—no care being taken to preserve the spine

* "This happened about Christmas."

from pressure: for, as yet, although I had a knowledge, doubtless somewhat superficial, of irritation of the spinal marrow, and occasionally practised according to the recommendation of the authors above quoted, strange as it may seem, I was permitting this disorder to make dreadful inroads on my own health and comfort, without even a suspicion of the true cause. And when, from a hint from Dr. A. L. Pierson, the truth burst in upon the mind, another week was nearly lost, in consequence of keeping a recumbent position on a feather bed. Hard and slow the progress towards recovery was made by sitting up most of the time, until the possession of the hydrostatic bed removed the chief obstacles to recovery. After the discovery of the true nature of my case, I abandoned the use of internal medicine altogether, satisfied that the curative process could not be materially advanced thereby. It would seem that the public have not yet realized the immense importance of Dr. Arnott's invention—have not yet perceived its very general application to the relief of all, who, from any cause, are compelled to assume, for days or weeks, a recumbent position. The medical journals, so far as I have seen, have only given Dr. Arnott's modest account of the uses to which it may be applied, without recommending the invention, as it deserves. But when we consider of how great importance ease of position must be to almost every curative process—be it of a broken bone, acute, or chronic disease—the hydrostatic bed becomes, so far as human comfort is concerned, the most important invention of the age.

"The vast number and form of diseases, arising from irritation of the spinal marrow, and ganglia of the sympathetic nerve, and the probability that a great number of other diseases, such as fevers, &c. often become complicated with, and rendered fatal by spinal as well as cerebral irritation, caused, perhaps, by confinement to beds, which, instead of giving rest, irritate the spine, by too constant pressure—render it highly probable that the hydrostatic bed will, as soon as its value is generally known, save many lives, and an amount of human suffering vastly greater than imagination has yet conceived. Besides, even for the healthy it is a most luxurious bed—warm, dry, and easy. In point of comfort, it so far exceeds all other couches, that it will be strange indeed, if it should not come into extensive use for the common purposes of rest."

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Tumours of the Neck. By N. R. Smith, M. D. Professor of Surgery in the University of Maryland.—*Case I.* The remarks of Allan Burns on tumours of the neck and the practicability of their removal in certain cases, appear to me to inspire the young surgeon with too much dread of resorting to the knife in such instances. The situation of tumours in relation to the fascia of the neck, has, in my opinion, been too much regarded in determining the question of their removal. Mr. Burns perhaps, being the first to demonstrate particularly these expansions, was naturally disposed to make them of as much importance as possible in a practical point of view. From his remarks we should infer, that when a tumour is situated below the deep lamina of the cervical fascia, it can not have continued long and acquired any considerable magnitude, without establishing serious connexions with the important organs of the particular region in which it may chance to be located. This is undoubtedly true with regard to those tumours which speedily impart their peculiar nutritive actions to the surrounding parts; but by no means so in regard to those which are enclosed in cysts. I have often known them to be so forcibly pressed against other organs as to receive the impression of them without establishing any adhesion. I am satisfied from my own experience in the removal of such tumours, that the caution of Mr. Burns relative to their extirpation when they chance to be situated beneath the fascia, is far too strongly expressed.

In the winter of 1830, I visited Mrs. Gilliland, aged about twenty-five years, the wife of a farmer living near Gettysburg, Pa., for the purpose of examining a large tumour situated in her throat. I found it to be located on the right of the thyroid cartilage, under the border of the sterno-cleido-mastoid, and having the omo-hyoid muscle strained directly across its centre. It was of course com-

pletely beneath the deep fascia, and was in immediate contact with the sheath of the great vessels. Its form was ovoidal, its size that of a large goose's egg, and it occupied nearly the whole space from the angle of the jaw to the clavicle, creating great deformity. Its long diameter corresponded to the length of the mastoid muscle. It was very firmly bound down by the mastoid muscle and fascia, and was moved with great difficulty beneath them. I first satisfied myself that it was no portion of the thyroid gland. I also convinced myself that it did not involve in disease the great vessels and nerves of the neck. That by its mechanical pressure it irritated these organs was sufficiently manifest, for there existed a train of symptoms evidently resulting from mechanical pressure on the pneumogastric nerve. The stomach was much impaired in its functions, her appetite being capricious, and food often occasioning much distress in the organ soon after being taken. She was also sometimes affected with nausea, diarrhœa, alternating with costiveness. There was also not a little embarrassment of respiration. She suffered severely with occasional pains in the head, on the side corresponding to the disease. The pulse also gave evidence of considerable constitutional irritation.

The tumour had an elastic feel, which caused me to doubt whether it was encysted or sarcomatous. I am not positive as to its duration, but my impression is, that it had been several years in arriving at the magnitude then present.

After a careful examination of the case, in association with my friend Dr. Berlachy of Gettysburg, we decided that the extirpation of the tumour was in all probability practicable, and I expressed a willingness to undertake it; not without much apprehension, however, on account of its relations to the deep fascia, blood-vessels, and nerves. The patient and friends immediately assented to the proposition.

I commenced the operation by incising the integuments and platysma muscle along the border of the sterno-cleido-mastoid muscle to the whole extent of the tumour. Dividing the fascia of the neck, I encountered the omo-hyoid muscle, drawn like a ribbon obliquely across the tumour. From its extreme tension I found it necessary to divide it, and thus the tumour and its immediate coverings were completely exposed. I then carefully, with the director and knife, divided many layers of cellular tissue which enveloped it, and at length exposed the proper cyst of the diseased mass. This fortunately I found to be but little adherent to the surrounding part. I was enabled, indeed, to effect its division to a great extent by the use of the handle of the knife alone, occasionally, however, finding it necessary to divide a band of cellular tissue. The tumour had kept itself perfectly distinct from the surrounding parts, which every where presented a perfectly healthy appearance. On dissecting it carefully from its bed, I found that it had been so firmly pressed against the great vessels, and against the cartilages of the larynx, that it had received distinct impressions from them. The great vessels were lodged in a furrow on its inner and posterior part, but were separated without any considerable difficulty. I found it necessary to secure no artery until I had removed all its connexions except a small pedicle of vessels which attached it to the deepest part of the wound. These I included in a ligature, and then divided them.

On the removal of the tumour, an immense chasm presented itself in the throat, the cartilages of the larynx were completely exposed, and the great vessels stripped from near the clavicle to the angle of the jaw. I closed the integuments by means of three interrupted sutures assisted by adhesive strips, and brought the parietes of the wound into contact by means of an elastic compress. The tumour presented, on dissection, the medullary sarcomatous character.

The patient necessarily suffered severely during the operation, but I left her soon after in a more comfortable condition than might have been expected. As I subsequently learned from Dr. Berluchy, she recovered rapidly. A great part of the wound healed by the first intention, and the cicatrix formed in such a manner as to cause but little deformity. Those symptoms of gastric disorder

and constitutional irritation, which I had supposed to arise from the mechanical pressure of the tumour, totally disappeared. She recovered health and strength, and subsequently became the mother of a vigorous child. She still remains in good health.

Case 2.—Mr. Winrotte, of Littlestown, Pennsylvania, a farmer, aged about forty-two, became a patient of the Baltimore Infirmary, in the winter of 1828, on account of a large tumour located upon the side of the throat, and circumstanced almost precisely as the last described. Its form and size were almost precisely the same, and like it, it was covered by the anterior border of the mastoid muscle and by the omo-hyoid. Symptoms extremely like those present in the case of Mrs. Gilliland, were present in this instance. Deglutition, however, was more seriously affected, owing as I thought to the greater degree of power with which the muscles urged the tumour upon the trachea and larynx.

On a careful examination I became satisfied that the removal of the tumour was practicable. My friend, professor Davidge, however, was rather averse to such an attempt, and cautioned me in regard to it. The patient was desirous that it should be performed, and I determined to proceed. The operation was executed, (in presence of the medical attendants and pupils of the infirmary,) in a manner almost precisely similar to that described in the last case. No blood-vessels of any considerable magnitude were divided, and but a single ligature was necessary. Much pain in the region of the wound followed the operation, and great difficulty of deglutition. These, however, subsided after a few hours, and the condition of the patient become comfortable. He left the infirmary in about a week after the operation, the wound having nearly healed. I saw him some six months subsequent to this, and there was then present no appearance of disease whatever. The tumour proved to be the medullary sarcoma.

After the lapse of about a year from the time of the operation, I learned by letter from his medical attendant, that a tumour of forbidding appearance had presented itself in the cicatrix which had resulted from the operation. I was soon after requested to visit him, and to attempt the removal of the disease once more with the knife. But I found the tumour presenting a totally different aspect from that which it was in the previous instance. It was now hard, knotted, closely adhering to the surrounding parts, and excessively painful. I could not by any means withdraw it from its vicinity to the great vessels and nerves, and any attempt to do so caused great pain. I attributed this, however, in some measure, to the adhesions which the cicatrix had caused. He suffered almost constantly, extreme pain in the head, shooting up from the region of the tumour along the course of the great vessels and nerves. There existed a great degree of gastric disorder, and not a little embarrassment of respiration. He was now suffering great constitutional irritation, his strength and flesh were rapidly wasting, and it was manifest that unless speedy relief was rendered, the case must soon come to a fatal conclusion.

I expressed doubt with regard to the practicability of the removal of the tumour, because of its close adhesion to the surrounding parts, and the symptoms indicating involvement of the blood-vessels and nerves of the neck. I determined, however, to make an incision upon it—to ascertain its connexions, and then to effect its removal if practicable. Accordingly, in the presence of my friends, Drs. Shorb and Miller, and several of my pupils, I divided the integuments on the inner side of the cicatrix, and proceeded to explore its connexions. After cautiously dissecting it from the muscles, and separating its external connexions, I introduced the finger into the wound, and made gentle efforts to detach and separate the tumour from the vessels. While I was in the act of doing this I felt something give way to a gentle effort of the finger, as if some soft substance were ruptured by it, and instantly the wound, the table, and the floor was deluged with dark blood.

I immediately discovered that the internal jugular vein had become involved in the disease, and that its coats, having become soft and brittle, had been largely rent by even the slight traction which had been made upon them. The

vessel appeared also to have become enlarged, and, as by the struggles of the patient, the irregularity of breathing, and the action of the heart, the blood was pressed with great force from the cava into the jugular, the hæmorrhage was truly appalling. Hæmorrhage from the carotid, I am confident could not have been so rapid. It bubbled so copiously from the wound, that in an instant, and before I could press my thumb into the bottom of the cavity, the floor was covered with blood, and the patient fell back inanimate, and as if dying. Respiration and circulation being thus suspended, I was perfectly aware that instant action, before any reäction should occur, was necessary to save our patient from death on the operating table. I opened the wound more freely with the knife. I removed the friable portions of the tumour—I exposed the vein, and found it torn open down close to its junction with the subclavian. I then seized an armed needle which was at hand, and at the moment that the patient was reviving, and that blood began again to gush, I passed a strong ligature beneath the vessel, and secured it close behind the clavicle. This was done with some apprehension, lest I should include the pneumogastric nerve. After encircling the vessel, however, I satisfied myself that the nerve was not included, and immediately drew the knot. There was still a good deal of venous hæmorrhage from the upper orifice of the wound, and an oozing of arterial blood from the remainder of the diseased medullary mass. It was manifest that the coats of the artery also were involved and converted into the peculiar structure of the disease, and that any further effort upon the latter would at once produce an arterial hæmorrhage. I therefore at once closed the wound, and applied to it as the most efficient compress which could be used in that region, a soft sponge. The bleeding immediately ceased, and slight pulse returned in the extremities. The patient was carried to his bed, and although he suffered greatly, and was much reduced, immediate dissolution was no longer threatened.

I was obliged to leave my patient, to return to Baltimore soon after the operation, but the conclusion of the case was related to me by Dr. Shorb, of Littlestown. He survived the operation about ten days, and then sunk apparently from exhaustion. It is manifest therefore that he could not have perished from phlebitis, which by some is supposed almost necessarily to arise from the application of ligatures to veins of such very large size, and in a diseased condition.

Another fact is worthy of particular notice. At the moment that blood was gushing most copiously from the wound—when the patient was fainting, and the inspirations were unfrequent, deep and strong, I distinctly heard a bubbling of air as it was sucked into the vein. I apprehended at the moment, that immediate death would be the consequence, but I am not aware that any particular morbid phenomenon resulted from it.—*Baltimore Med. and Surg. Journ. July*, 1834.

Claims of British Surgery, to the Triumph of First applying a Ligature to the Common Iliac with Success.—In an article in the Medico-Chirurgical Review, for January last, (p. 278,) announcing the successful result of the case in which Mr. Guthrie, on the 24th of August last, (1833,) applied a ligature to the common iliac artery, the editor observes, "thus this most formidable operation has been successfully performed for the first time, and while it adds a wreath of laurel to the brows of the distinguished surgeon, it exhibits a splendid triumph of British surgery." Our cotemporary has been too hasty in claiming this triumph for British surgery, and has placed the laurels on brows not destined to wear them. The distinguished surgeon to whom the wreath justly belongs is our colleague and countryman, Dr. Mott, who, upwards of *seven years since*, (March 15th, 1827,) successfully applied a ligature to the common iliac, see No. I. p. 156, of this Journal. Dr. Mott's patient, we learn, *is still living*.

It is not a little singular, also, that Mr. Guthrie, in his work, "On the Diseases and Injuries of Arteries," p. 365, should have recorded Dr. Mott's case as

fatal, more especially when he extracts the account of the operation from this Journal, in which the *entire restoration* of the patient to health is explicitly mentioned.

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Surgical Novelties.—Our friend, Dr. Vaché, of New York, writes to us that Professor Mott has tied the left subclavian artery, for axillary aneurism, with success. Also that the same distinguished operator has tied both carotids simultaneously, with the view of cutting off the circulation, and thus arresting the growth of an enormous disease of the parotid gland. The patient survived about twenty-four hours.

Dr. Mott has likewise extracted from a man an enormous calculus, measuring nearly twelve inches in circumference, and weighing upwards of seventeen ounces, avoirdupois. Every effort to crush and bore it having failed, Dr. M. extracted it entire, and as it was as large as the lower aperture of the pulvis, great violence was of course done to the soft parts. The case terminated fatally on the fifth day. The patient had suffered many years, and was very much reduced.

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Table exhibiting the Doses and Properties ascribed to the Principal Medicines and Officinal Preparations. For the use of the Materia Medica Class of the University of Maryland. By Professor Dunglison.—This is a very convenient, neatly arranged table.

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Testimony to Professional Merit.—Certain citizens of Pine Ridge, Adams county, Miss. have presented to Dr. Samuel A. Cartwright a splendid vase, with a suitable inscription, as a testimonial of their sense of his eminent services, in the year 1833, during the prevalence of cholera.—*Natchez Courier and Journal, May 9th*, 1834.

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Transylvania University.—262 students attended the medical lectures in this Institution during the session of 1833–4.

At a public commencement held on the 14th of March, 1834, 66 were graduated Doctors in Medicine.

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Medical College of the State of South Carolina.—The number of medical students in this Institution during the session of 1833–4, was 103.

At the annual commencement 39 were graduated Doctors in Medicine.

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University of Virginia.—Dr. Augustus L. Warner has been, we learn, unanimously and unsolicitedly appointed by the Board of Visitors of the University of Virginia, Professor of Anatomy, Physiology, and Surgery, in that flourishing Institution. Dr. W. has been delivering with great reputation private lectures on Anatomy and Physiology in Baltimore for the last four years, and he will, no doubt, do honour to himself and to the Institution to which he is now attached.

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New Publications.—We have been requested to announce, that Dr. J. R. Coxe, Professor of Materia Medica in the University of Pennsylvania, has in press and will speedily publish a work, entitled "An Inquiry into the Claims of Dr. Harvey to the Discovery of the Circulation of the Blood; wherein is Demonstrated the Injustice of those Claims, and an Attempt made to place this Discovery on a more Equitable Footing."

Also that Dr. Alexander C. Draper is preparing for publication, "A Treatise on Mania a Potu, containing Observations on its History, Pathology, Symptoms, mode of Treatment, &c. with Preliminary Inquiries into the Nature and Laws of Irritability or Organic Force."

We shall take the earliest opportunity after their publication of making our readers acquainted with these works.

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